The Mining Journal
AND ATMOSPHERIC RAILWAY GAZETTE,

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 575.—Vol. XVI.] LONDON: SATURDAY, AUGUST 29, 1846. [Price 6d.

CARMARTHENSHIRE.—TO BE LET, OR SOLD, several SEAMS of ANTHRACITE COAL and IRONSTONE, lying under the farms of Killery, New Inn, Foy, and Raesvach, situate in the parishes of Llanelly and Llangendeirne, in the said county. If desirable, the surface will also be disposed of.—The above property is within a short distance of the Kidwelly Canal, and distant from Pembrey Floating Harbour, eight miles, where the present demand for coal far exceeds the supply.—Further particulars can be obtained on application to Dr. Lawrence, Carmarthen, or to Mr. John Griffiths, Sluch Villa, near Brecon.—July 27, 1846. 1

PARK HILL MINES, DEAN FOREST—consist of an extensive tract of IRON ORE and COAL, suited for the supply of blast-furnaces.—The iron mine contains 40 per cent. of iron, and is in the rich limestone vein that supplies the furnaces at Cinderford, Parkend, and Darkhill, in the Forest, where excellent iron is now being made. The coal mine consists of four beds of coal, of excellent quality, and the whole is drainable by level. A lease will be granted on favourable terms.—Further particulars may be had on applying (post paid) to Henry H. Fryer, Esq., solicitor, Coleford, Gloucestershire. 2

TO BUYERS OF YELLOW OCHRE.—ON SALE, a NEW CORNISH OCHRE.—Samples may be seen at J. Ormerod's office, St. James's Chambers, Back King-street, Manchester. 3

STEAM-ENGINES.—From 8 to 20-horse power ENGINES ALWAYS IN STOCK.
Apply to Mr. CAPPER, ENGINE-MAKER and FOUNDER, BIRMINGHAM. 4
Price.....£14 *per horse-power.*

HEWAS CONSOLS TIN AND COPPER MINE, CORNWALL.—This MINE is divided into 1024 SHARES, of £3 each.—Deposit £1 per share. All particulars respecting the remaining SHARES in this adventure, may be obtained on application to Messrs. Linthorne, Jones, and Co., agents to the company, 48, THREADNEEDLE-STREET, LONDON. 5

BANWEN IRON COMPANY, GLAMORGANSHIRE.
Capital £100,000, in 10,000 shares, of £10 each.—Deposit £2 per share, Payable on complete registration; with two calls of £2 each, beyond which no further calls will be made.
(Registered Provisionally, pursuant to the 7th and 8th Vic., cap. 110.)

DIRECTORS.
SAMUEL BOYD BARNETT, Esq., 17, Dorset-place, Dorset-square
SAMUEL KENTISH, LL.D., Llangerry, Carmarthenshire
CLAUDIUS ARMSTRONG, Esq., Pencoed-hill, Kidwelly
ALGERNON H. SWIFT, Esq., Crosby-hall Chambers, Bishopsgate-street, iron merchant
FREDERICK FOWLER, Esq., Windsor
CHARLES FREDERIC PHILIPS, Esq., Adam-street, Strand
ROWLAND JAY BROWNE, Esq., Ynysarwed, Glamorganshire, and the Inner Temple, London.—(With power to add to their number.) 6

BANKERS.
Messrs. Spooner, Attwood, and Co., Gracechurch-street.

SOLICITOR.
William Martin Wilkinson, Esq., 44, Lincoln's Inn-fields.

SECRETARY—Sydney Pottinger Harris, Esq.

The object of this company is to work the ironstone and anthracite coal of the best quality lying under 532 acres, (nearly one square mile) situate near to the Banwen mountains, 13 miles from Neath, and 16½ from Swansea, Glamorganshire, and in the immediate vicinity of the well-known Ynyscedwin, Onllwyn, and other highly prosperous iron-works.

The minerals, which have been surveyed by very eminent surveyors, and are proved by working in the adjoining properties to consist of four veins of coal, respectively of 4, 12, 5, and 3 feet in thickness, and veins of iron mine, amounting together to 8 feet in thickness, both the coal and iron mine crop out of the surface of the land; the coal will, therefore, be worked by level, and the mine by patching, without pits or machinery of any sort. There are cheap limestone quarries in the neighbourhood, from which the other works obtain their flux, and building stone and fire-clay are found on the property.

The estate is most favourably situated for transit, as by laying down rather less than a mile and a half of tramway (at an expense of £1200), the works will be placed in communication with the Swansea Canal; and the South Wales, Swansea Vale, and Vale of Neath Railways, and with the ports of Swansea, Neath, and Britton Ferry; there will, therefore, be the most ample means of transit to all parts.

It is proposed to erect six smelting furnaces, each 34 feet high, which will turn out at a low average of 14,000 tons of pig iron per annum, the cost of these (which may be completed within six months), with the necessary offices, including the expense of opening out the mine, the shares allotted to the lessee for his interest under the lease, and a sufficient sum in hand as working capital, will not exceed 6*l.* a share, beyond which no calls will be made. From the coal and ore cropping out on the surface, the economy of patching and level working, and the facilities of procuring limestone, iron may be made (including wear and tear of the plant and works, and the expense of management) for 2*l.* 10*s.* per ton, (see the prospectus and estimates); and reckoning a sale of the iron at 4*l.* per ton merely, (it is now worth upwards of 5*l.* per ton), the return would be above 25 per cent.; and as at the worst time anthracite pig has not sold at less than 3*l.*, which would leave a net profit of 7000*l.*, it follows that under any circumstances the return upon the capital must be very large, varying from 12½ per cent. upwards.

It is quite unnecessary to touch upon the prospect of the iron trade, as the ordinary supply is only equal to the ordinary demands, and there is an additional demand of at least 3,000,000 tons (two years' entire make) for English railways alone, hanging over the market. Indeed the dividend of 20 per. cent., declared by the New British Iron Company at their last meeting (see the report in the *Mining Journal* of July 11, 1846), sufficiently shows the prosperity of the trade. The liability of shareholders will be limited by the deed of settlement, and by the incorporation of the company to the amount per share to be called up—viz: 6*l.* per share. For a more full detail see the prospectus and estimate, which may be had, where plans of the property and the minerals, surveyor's report and sections and specimens of the minerals, may be inspected.

Applications for shares, with a reference in the usual form, may be made to Mr. T. Thomas, mining agent, 80, Old Broad-street; to the secretary, S. P. Harris, Esq., at the offices of the company, 23, Threadneedle-street; and to the solicitor, W. M. Wilkinson, 44, Lincoln's-Inn-fields.

PRELIMINARY ANNOUNCEMENT.

WHEAL CURTIS COPPER MINING COMPANY, in the PARISH OF CROWAN, NEAR CAMBORNE, CORNWALL.
In 6000 shares, of £4 each.—Deposit £1 10*s.* per share. 7
OFFICES—GRESHAM ROOMS, BASINGHALL-STREET,

In the present age of busy speculation, it may be deemed presumptuous to present another scheme to the attention of the public—a vast portion of which have been severe sufferers by the railway mania, and its consequent panic of 1845. The proprietors of the above mine have anxiously waited a favourable moment for their present announcement—content to let the gambling fever for joint-stock impossibilities subside, and a healthful condition of the money market succeed, before submitting a property, of the value of which they are assured, to the open stage of public opinion.

As one-half of the shares in this mine are held by the owners of the property, it is intended to allot 3000 shares among the best applicants, from which number a board of directors will be selected, to whom the full power of working the mine and allotting the shares, &c., will be committed.

Parties of respectability will be furnished with full particulars, by application personally, or by letter (post-paid), to the offices, as above, where specimens of the ore may be seen, between the hours of Eleven and Four o'clock daily.

On behalf of the proprietors,
GEORGE PILKINGTON, Manager pro tem.

CHATHAM NICKEL AND COBALT MINING COMPANY.
SITUATE AT CHATHAM, STATE OF CONNECTICUT, UNITED STATES.
Capital £20,000, in 4000 shares, of £5 each.—Deposit £1 per share. 8
This company is incorporated pursuant to the law of the State of Connecticut, which limits the liability of the shareholders to the amount paid upon their shares.

"The ores have been analysed by eminent practical chemists of both England and America, and have been found to average 18 per cent. cobalt and nickel—about 4 per cent. cobalt, and 12 to 18 per cent. nickel."

Application for shares, and full particulars, to be obtained to the solicitors of the company, Hull Terrell, Esq., 30, Basinghall-street; and of Mr. R. E. Little, stockbroker, 11, Warnford-court, Throgmorton-street, London.

THE PATENT SAFETY FUSE,
FOR BLASTING ROCKS IN MINES, QUARRIES, AND FOR SUBMARINE OPERATIONS.—This article affords the SAFEST, CHEAPEST, and most EXPEDITIOUS MODE of effecting this very hazardous operation. From many testimonies to its usefulness with which the manufacturers have been favoured from every part of the kingdom, they select the following letter, recently received from John Taylor, Esq., F.R.S., &c.:—"I am very glad to hear that my recommendations have been of any service to you; they have been given from a thorough conviction of the great usefulness of the Safety Fuse; and I am quite willing that you should employ my name as evidence of this." 9
Manufactured and sold by the Patentees, BICKFORD, SMITH, and DAVEY, Camborne, Cornwall.

TO ENGINEERS, RAILWAY CONTRACTORS, MINING AGENTS, IRONMASTERS, AND OTHERS REQUIRING FINE GREASE for MACHINERY and AXLES of every description.—JOSEPH PERCIVAL'S IMPROVED ANTI-FRICTION GREASE is—after trials on machinery and axles of every kind where constant friction is kept up—admitted to be the most useful, economical, and best preparation of the kind ever offered to the public. 10
References to scientific and practical men can be given, and testimonials shown of its great excellence.—Samples forwarded on application at the manufactory, Green-street, Wellington-street, Blackfriars-road, London.

STEAM COAL—WITHOUT SMOKE, as per experiments made at her Majesty's Dockyard, Woolwich.
CAMERON'S COALBROOK STEAM COAL, AND SWANSEA AND LOUGHOR RAILWAY COMPANY.—(Completely Registered and Incorporated.)
OFFICES—9, MOORGATE-STREET, LONDON. 11
The directors are now prepared to supply steam ship companies, manufacturers, shippers, and others, with the company's steam coal, either at the company's wharf at Swansea, or in London. A statement, showing by comparative trial the superiority of this coal for steam purposes over every other, and a scale of prices, may be had on application at the company's offices here, or at their wharf at Swansea.—March 18, 1846.

TO ENGINEERS AND BOILER-MAKERS.
LAP-WELDED IRON TUBES FOR STEAM-BOILERS.
THE BIRMINGHAM PATENT IRON TUBE COMPANY,
42, *CAMBRIDGE-STREET, BIRMINGHAM, & SMETHWICK, STAFFORDSHIRE,*
MANUFACTURE TUBES under an exclusive license from Mr. Richard Prosser, the patentee. These tubes are now very extensively used in the boilers of marine and locomotive steam-engines in England and on the continent—are stronger, lighter, cheaper, and more durable than brass or copper tubes, and warranted not to open in the weld. They may be fixed in the boilers without ferules, and can be taken out and refixed without additional trouble or expense.—Address, 42, Cambridge-street, Crescent, Birmingham.
LONDON WAREHOUSE,
68, *UPPER THAMES-STREET.* 12

IMPORTANT TO RAILWAY COMPANIES.
PATENT KAMPTULICON COMPANY, 18, CORNHILL.
This company having completed their new factory, are prepared to supply railway managers and contractors with an elastic material (perfectly non-absorbent) to place between the rails and sleepers, and between the frames and bodies of carriages, to prevent jarring, and, consequently, wear and tear. The elastic planking is strongly recommended to be used for the backs and sides of carriages, to prevent splinters when accidents occur.
By order of the board, P. G. GREVILLE, Secretary. 13

WILLIAM JOYCE, DESIGNER AND ENGRAVER ON WOOD,
11, *BOLT-COURT, FLEET-STREET, LONDON.*
W. J. respectfully informs AUTHORS, BOOKSELLERS, PRINTERS, &c., that, having had long practical experience in DRAWING and ENGRAVING, of every variety—viz.: Inventions of all descriptions, for Engineers, Machinery, Figures, Landscapes, Architectural and Perspective, Agricultural and Anatomical subjects; Specimen Books for Civil Engineers, Ironfounders, Lamp Manufacturers, Silversmiths, and every other Branch requiring Illustrations, he is enabled to speak with confidence, as to the satisfaction he could give with regard to promptness, accuracy, and economy.
Weekly and Monthly Publications Contracted for. 14

Just published,
AN EXPOSITION OF THE DANGERS AND DEFICIENCIES OF THE PRESENT SYSTEM OF RAILWAY CONSTRUCTION, with SUGGESTIONS FOR ITS IMPROVEMENT. By C. H. GREENHOW.
John Weale, 59, High Holborn.
Models, illustrating the principle, may be seen at No. 3, Lothbury. 15

THE RAILWAY REGISTER AND RAILWAY PORTFOLIO, for September, No. XXII., edited by HYDE CLARKE, Esq., price 2*s.* 6*d.*, contains a large collection of old, curious, and original Prospectuses, with Notes—Indian Railways—Mr. Hackett and his Statistics—How are Railways to be Constructed?—Statistics of Traffic, by Hyde Clarke—American Railways—Gleanings among the Mines, &c.
No. 42, Basinghall-street; Simpkins and Marshall, Stationers' Hall-court; Weale, 59, High Holborn; Grapell and Waring, Webb, Liverpool; Thomson, Manchester, and all booksellers. 16

ATMOSPHERIC RAILWAY.—A full-sized MODEL of CLARKE and VARLEY'S PATENT RESILIENT TUBE ATMOSPHERIC RAILWAY is NOW BEING WORKED, at 8, JOHN-STREET, CAMBRIDGE-HEATH.—The days of working are Tuesday, Thursday, and Saturday, from Twelve o'clock till Five.—Gentlemen interested in railways, engineers, and scientific men, are particularly requested to examine for themselves.
*** John-street is about two miles from the Bank—omnibuses run to and from every quarter of an hour. 17

ESSEX AND SUFFOLK RAILWAY.—The trustees appointed for the final settlement of the outstanding claims on the Essex and Suffolk Railway Company, hereby give Notice to all holders of scrip receipts in the said company, that the OFFICES will be finally CLOSED on the 29th of September next, and all SCRIP must be sent in, on or before the 19th Sept.—the last day of payment being the 26th of that month.
By order,
Offices, 12, Nicholas-lane, August 26, 1846. ROBERT MAPLETOFT, Sec. 18

CORNWALL RAILWAY.—Notice is hereby given, that the Act, authorising the construction of this railway, having received the Royal Assent, all persons holding scrip certificates for shares in this company, are requested to transmit the same for registration either to the Secretary, at his office, Truro, or to Wm. Wood, Esq., 449, West Strand, London, on or before Saturday, the 19th of September next, with their names, professions, and residences, distinctly written, in order that the same may be correctly entered in the register of the company. An official receipt will be given for the scrip, which receipt will be afterwards exchanged for the sealed certificates, with as little delay as the preparation of the same may require. Due notice will be given when the sealed certificates will be ready for delivery. 19
Shares, in respect of which no application for registry shall be made on or before the above date, will be registered in the name of the original subscriber, after which no share can be passed, otherwise than by a formal transfer under the provisions of the Act.
Forms of letters claiming to be registered, may be had at the secretary's office, Truro, or at 449, West Strand, London.
And notice is hereby further given, that interest after the rate of £4 per cent. per annum will be allowed on the deposits paid upon all registered shares from the following times—viz.: from the 1st of December, 1844, on the deposits of £3 per share on £50 shares, and from the 1st of November 1845, on the deposits of £2 per share on £50 shares, and of £2 10*s.* on £25 shares. The interest will be made up to the 29th of September next, and the interest warrants will be issued soon after the completion of the registration
By order of the board,
Truro, August 18, 1846. P. P. SMITH, Secretary pro tem.

NORTHERN COUNTIES UNION RAILWAY COMPANY.—At the First Ordinary General Meeting of the proprietors of this company, held in pursuance of public notice, at the London Tavern, Bishopsgate-street, London, on Tuesday, the 25th day of August, 1846,
W. BERESFORD, Esq., M.P., in the chair.
1. Resolved unanimously,—That the report of the directors (now read) be adopted, printed, and circulated amongst the proprietors.
2. Resolved unanimously,—That the number of directors be 18, and that the 18 gentlemen, whose names are as follows, be appointed directors of this company for the ensuing year:—
WM. BERESFORD, Esq., M.P., 77, Pall-Mall.
M. WYVILL, Esq., Constable Burton, Leyburn.
WM. CRACKANTHORPE, Esq., Newbiggen Hall, Penrith.
WILLIAM JOHN ANDERSON, Esq., Swinithwaite Hall, Bedale.
JOSEPH UNDERWOOD, Esq., Blackheath-park.
HENRY HOWARD, Esq., Grey Stoke Castle, Penrith.
THOMAS SALKELD, Esq., Holm Hill, Carlisle.
CHRISTOPHER OTHER, Esq., Elm House, Leyburn.
JOHN WHITWELL, Esq., Kendal.
GEORGE PLACE ROBINSON, Esq., West Burton, Leyburn.
WILLIAM R. COLLETT, Esq., M.P., 9 (A), St. James's-square.
TIMOTHY HUTTON, Esq., Clifton Castle, Bedale.
WM. HENRY ORDE POWLETT, Esq., Bolton Hall, Bedale.
WILLIAM HOPES, Esq., Marton House, Appleby.
JOSEPH MIDDLETON, Esq., Grove House, Leeds.
HENRY PEASE, Esq., Pierremont, Darlington.
WM. ANNING, Esq., 4, Park-terrace, Brixton.
JOHN CASTEL HOPKINS, Esq., Woodside, Darlington. 20
3. Resolved unanimously,—That the sum of £1000 be awarded to the directors, as the remuneration for their services during the ensuing year, to be divided among them as the board may think proper.
4. Resolved unanimously,—That Richard Dutton, Esq., of Denmark-hill, Surrey, and James Gandy, Esq., of Heaves Lodge, Westmoreland, be the two auditors of the company for the ensuing year, and that the remuneration of £30 be paid to each.
5. Resolved unanimously,—That Charles Locock Webb, Esq., be the secretary of the company, and that a salary of £500 per annum be paid to that officer.
6. Resolved unanimously,—That the directors be, and are hereby, authorised to take all such means as they may deem necessary, to enable them to apply to Parliament for powers to make alterations, deviations, and modifications in the line, and for making any reduction in the amount of the company's shares and capital, and generally to treat with any other companies or persons, as they may consider beneficial to the interest of the Northern Counties Union Railway Company.
7. Resolved unanimously,—That the next ordinary general meeting of the proprietors be held within the month of February, 1847—the day to be fixed hereafter by the directors.
8. Resolved unanimously,—That the cordial thanks of this meeting be given to the chairman, deputy-chairman, and directors, for their indefatigable exertions on behalf of the company.
9. Resolved unanimously,—That the best thanks of this meeting be given to the chairman, for his able and courteous conduct in the chair.
London, August 25, 1846. (Signed) WM. BERESFORD, Chairman.

JAMES LANE, MINING SHAREBROKER,
75, *OLD BROAD-STREET, LONDON.* 21

JOHN HARVEY, SHAREBROKER AND ASSAYER,
LISKEARD, CORNWALL. 22

CHARLES THOMAS CRAPP, SHAREBROKER,
TAVISTOCK, DEVON. 23

WILLIAM TRENERY, DEALER IN RAILWAY AND MINING SHARES.—ESTABLISHED TEN YEARS.
OFFICES, No. 50, *THREADNEEDLE-STREET, LONDON.* 24

MESSRS. LINTHORNE, JONES, AND CO., STOCK, MINING, AND SHARE AGENTS,
*** Every information will be afforded as to the markets and prices of the above, by application (post-paid) at their offices,
48, *THREADNEEDLE-STREET, LONDON.* 25

WILLIAM H. SMITH, MINING SHARE AGENT,
10, *WARNFORD-COURT, THROGMORTON-STREET.*
*** SHARES in many valuable MINES FOR SALE, and every information will be afforded, on application. 26

WILLIAM FOX AND SON, No. 53, CASTLE-STREET, LIVERPOOL, have always on SALE PIG-IRON, RAILWAY BARS, CHAIRS, and IRON of every description.—TIN PLATES, WIRE, &c. 27

MINING OFFICES, No. 1, ST. MICHAEL'S-ALLEY, *CORNHILL, LONDON.*
Messrs. WATSON & CUELL have received instructions to PURCHASE SHARES in East Tamar Consols, South Tamar, Copiapo, East Rose, Alten, Stray Park, and Mary Ann Mines; and have FOR SALE, SHARES in all the best DIVIDEND MINES in Cornwall and Devon, paying from 18 to 20 per cent. per annum. 28

THOMAS P. THOMAS, MINE AGENT AND DEALER IN RAILWAY AND OTHER SHARES,
No. 80, *OLD BROAD-STREET, LONDON.* 29
T. P. THOMAS, in returning his most grateful thanks to his friends for the support they have given him, begs to assure them, that, from his personal knowledge of the leading mining captains and adventurers in Cornwall and Devon, as well as the principal adventurers in London and in the country, he is enabled at all times to procure the earliest information as to the alterations in the different MINES, and has every facility for the PURCHASE and SALE of SHARES at fair market prices, without advertising what particular shares he is a buyer or seller of—considering such a mode injurious to his principal.
T. P. T. having lately returned from the county of Cornwall, and having personally inspected the underground workings of many of the mines, will be happy to give any information respecting them.

MINING OFFICES, REMOVED FROM 16, CORNHILL, to 1, THREE KING COURT, LOMBARD-STREET.—Mr. R. TREDINNICK (of Cornwall), having established PRACTICAL AGENTS and CORRESPONDENTS in every MINING DISTRICT, whereby he obtains early and accurate information respecting MINES, proffers his services to capitalists and adventurers in the PURCHASE and DISPOSAL of SHARES. 30

MINING PROPERTY.—CAPITALISTS who are disposed to INVEST in CORNISH and FOREIGN MINES, will find the present opportunity very favourable for so doing. From large sums having been lately diverted from such investments for railway speculations, standard mines are now selling at prices that will pay the purchaser 20 per cent. per annum for his outlay. There are also other mines that are on the eve of paying dividends, which can be recommended with confidence. 31
Applications to be made to Mr. JAMES HERBON, mining agent, No. 3, Adam's-court, Broad-street, London.

TO MINING SPECULATORS.—THOMAS LITTLE, MINE AND SHARE BROKER, 32
Begs to inform his friends, and speculators generally, that he has BUSINESS to transact in the following SHARES:—Wheal Concord, Devon and Courtney, Condurrow, South Basset, West Basset, Wheal Cleveland, Tiug-Tang, Dolcoath, Hawkmoor, &c.—Address *MR. LITTLE, HALL OF COMMERCE, LONDON.*

FRANCIS PRYOR, MINE AND SHARE BROKER,
COMFORD, GWENNAP, CORNWALL.
F. P. returns his grateful acknowledgments for the kind and liberal support he has received from gentlemen connected with the mining interest of Cornwall, &c., and begs to announce, that he has now added to the above business, that of AUCTIONEER and APPRAISER, and hopes, by punctuality and strict attention to the interest of those who may entrust him with their favours, to merit support. 33
N.B.—Mines inspected, and every information given.
One-half the amount advanced on any goods consigned to him for sale, by auction.
Dated Comford, July 22, 1846.

TINCROFT MINING COMPANY.—Notice is hereby given, that a QUARTERLY GENERAL MEETING of the shareholders in this company will be HELD on Thursday, the 17th of September next, at 44, Finsbury-square, at Three o'clock precisely.—London, August 26, 1846. 34

WEST WHEAL JEWEL MINING ASSOCIATION.—Notice is hereby given, that the period allowed for the payment of the call of 10*s.* per share, made on the 13th May last, and payable on the 6th July, having expired, a SPECIAL GENERAL MEETING of the shareholders will be HELD at the company's offices, as under, on Wednesday, the 16th day of September next, for the purpose of forfeiting all shares upon which the calls shall be unpaid on that day.
By order of the board, 35
57, Old Broad-street, August 27, 1846. WM. NICHOLSON, Secretary.

NOTICE TO THE MANAGERS OF MINING COMPANIES, SMELTING WORKS, &c.
Mr. MITCHELL (late Mitchell and Field) begs to announce, that ASSAYS and ANALYSES of all descriptions of ORES, MINERALS, and FURNACE PRODUCTS, are conducted at his LABORATORY, 23, HAWLEY-ROAD, KENTISH TOWN, to which direction all communications are to be addressed. 36
N.B.—Instruction in all branches of assaying and mineral analysis as usual.

VIRTUOUS LADY COPPER MINE:
WHEAL BEDFORD COPPER MINE:
TAVY CONSOLS COPPER MINE:
GREAT WHEAL WILLIAMS COPPER, LEAD, & TIN MINES: 37
THE BUSINESS of the ABOVE MINES is CONDUCTED at No. 5, BUCKINGHAM-PLACE, STONEHOUSE, DEVONSHIRE, where all particulars may be obtained. WALTER LOMER, Purser.

IMPORTANT TO ENGINEERS, MANUFACTURERS, RAILWAY AND STEAM-BOAT COMPANIES.
Messrs. W. & C. MATHER beg to call the attention of the ABOVE PARTIES to their IMPROVED ELASTIC METALLIC PISTONS. 38
The PRINCIPAL FEATURE and ADVANTAGE of THIS IMPROVEMENT is—
1. Its great ELASTICITY and SELF-ADJUSTING PROPERTIES, which enable it to yield to any inaccuracy of the cylinder, whether oval or taper, and to move with the least possible friction.
2. Its extreme SIMPLICITY and LIGHTNESS, consisting of only two pieces of metal, having the vertical and lateral pressure in due and proper proportion, independent of each other.
3. It takes the LEAST possible SPACE, and is well adapted for air and water-pumps, as it allows of a larger water way.
Messrs. W. & C. MATHER feel confident that it is the BEST ELASTIC METALLIC PACKING yet known, for the above reasons.
Models may be seen at the Salford Iron-Works, Manchester; at W. Barker's, engineer, Newton-Moor; and also at J. Mather's, engineer, Beaufort-street, Chelsea, London.

STEAM TO INDIA VIA EGYPT, MALTA, ITALY, ALEXANDRIA, AND THE PENINSULAR PORTS.
PASSAGE TO BOMBAY, MADRAS, AND CALCUTTA. 39
The Peninsular and Oriental Steam Navigation Company BOOK PASSENGERS for CEYLON, MADRAS, and CALCUTTA direct, by steamers leaving Southampton on the 20th, and for Alexandria, *en route* to Bombay, on the 1st of every month.
A steamer from Southampton leaves the 1st and 20th of every month for Malta, whence are steamers to Naples, Genoa, Civeta Vecchia, three times a month.
STEAM TO CORUNNA, OPORTO, VIGO, LISBON, CADIZ, AND GIBRALTAR.
A steamer leaves Southampton on the 7th, 17th, and 27th of every month.
Apply at the Peninsular and Oriental Steam Navigation Company's offices, 51, St. Mary Axe, London, where only passages can be secured throughout.

PATENT IMPROVEMENTS IN CHRONOMETERS, WATCHES, AND CLOCKS.—E. J. DENT, 82, Strand, and 33, Cockspur-street, watch and clock maker, BY APPOINTMENT, to the Queen and his Royal Highness Prince Albert, begs to acquaint the public, that the manufacture of his chronometers, watches, and clocks, is secured by three separate patents, respectively granted in 1830, 1840, 1842. Silver lever watches, jewelled in four holes, 6 gs. each; in gold cases, from £8 to £10 extra. Gold horizontal watches, with gold dials, from 8 gs. to 12 gs. each. 40
DENT'S PATENT DIPLIEDOSCOPE, or meridian instrument, is now ready for delivery. Pamphlets containing a description and directions for its use to be had gratis.

GENERAL METROPOLITAN RAILWAY.—J. C. H. Ogier, Esq., barrister-at-law, in a pamphlet, just published, by John Weale, High Holborn, proposes the construction of a metropolitan railway, which, while it unites all the stations of the several lines, would form an uninterrupted means of communication from place to place, through some of the most dense and populous districts around the metropolis. Commencing at the Tower of London, it would pursue a south eastern curve to the Thames Tunnel, through which it would pass; and, emerging on the southern side, cross the Greenwich and Croydon lines, pass through Southwark, Lambeth, and Clapham, join the London and South-Western, cross the Thames above Battersea-bridge, and meet the West London Railway at Kensington. Another branch from the Tower would cross the Blackwall and Eastern Counties lines; and, by a sweep to the westward by Bethnal Green, Islington, and Holloway, join the London and Birmingham at Camden Town, from whence it would proceed to the Great Western depôt at Paddington. A third branch would proceed westward from the Tower, along an embankment of the Thames on the north side, under all the bridges, to Westminister, from whence, by Pimlico and Chelsea, it would join the first described branch at Kensington. Mr. Ogier proposes, by this plan, to effect —1. The union of all the metropolitan railways.—2. Connection of depôts for troops and stores with the trunk lines.—3. Rendering water transit available to all the lines.—4. The embankment of the Thames; and 5, the connection of the various cemeteries with all the railways.—In considering the main objections to this plan, the author thinks the one of the most importance is the destruction of buildings, on which he justly observes—"If the site enables a more valuable class of buildings to be erected in the place of those destroyed, there is no more waste of property than what is incident to all improvement." He considers, "There is as wide a field open for public improvement as there was formerly after the fire of London;" and calls upon those who have the remedy in their power not to neglect it until too late. With all deference to the author, we must object to this plan for other reasons than the destruction of buildings; here is a plan of about 18 miles through expensive property, in a most circuitous route—while a plan most simple, and involving not a quarter of the distance, can be most conveniently carried out, in spite of the sapient report of Messrs. the Gauge Commissioners, and one which (we think) the *vox populi* will yet require to be carried into effect—we allude to the yet unoccupied ground at the north end of Victoria-street (the upper end of Farringdon-street), with the ground still to be cleared on the east and west; while even more land might still be had by removing the wretched tenements still further north, towards Brook-hill and Ray-street. This would be the most convenient spot for a station in London. Let the Great Western be carried into the Birmingham at any convenient junction, and let the latter be continued from Euston-square to such station; let the lines, terminating at Tooley-street, be connected by a branch through the tunnel, uniting the Blackwall and Eastern Counties; and let the latter be continued also to the Clerkenwell station—we have then only the South-Western and Richmond, which will, eventually, be continued to Hungerford-bridge, and probably join the South-Eastern at York-road. By this means the whole of the termini, now at a most inconvenient distance, would be brought into the heart of the metropolis; and without causing such an extensive destruction of property as would not be amply compensated for by the accommodation afforded the public, and the increased value of buildings in the vicinity.

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OBSERVATIONS ON THE MORE RECENT RESEARCHES IN THE MANUFACTURE OF IRON.

BY DR. J. LAWRENCE SMITH, OF CHARLESTON, S.C.

Fig. 1.

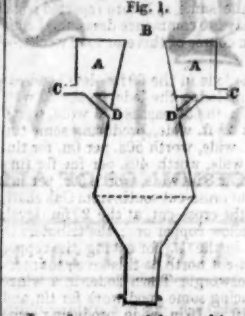
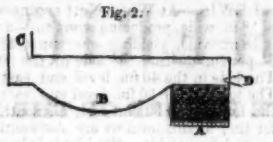


Fig. 2.



In a former article on this subject, the operations of the blast-furnace alone were alluded to; and among the statements then given, was that of the composition of the gas taken from the mouth of the furnace; which gas contained about 24 per cent. of carbonic oxide—this representing a large portion of the combustible used, which is lost in most of the furnaces now in operation in this country.

M. Ebelman states, that the combustion of the gas passing from the mouth of the blast-furnace is equal to from $\frac{66}{100}$ to $\frac{67}{100}$ of the calorific effect of the coal used, and MM. Bunsen and Playfair set it down as $\frac{80}{100}$, which last, I am inclined to believe, is rather too large a fraction; they spoke of the furnace worked with bituminous coal, and Ebelman had allusion to one worked with charcoal. Without being able to decide exactly what portion of the combustible of the blast-furnace is lost, it is sufficient to know that it is far greater than that consumed, to lead at once to the employment of means bringing into use this waste combustible.

The employment of the heat lost from the mouth of the blast-furnace, for the purposes of metallurgy, &c., has been claimed by many as having been used by them since 1834. The following are some of the claimants:—MM. Thomas and Laures (civil engineers); MM. d'Andelarre and de Lisa (forge-masters at Treveray); M. le Maréchal Marmont (in Austria); M. Houzeau Muiren (of Ardennes); and M. de Faber Dufaur (of Wasseralfingen). All their claims of priority, however, ought to be laid aside since the operation was performed many years prior to the time that any of them claim to have first employed the lost heat. And as a proof of this assertion, I give the following extract from the *Journal des Mines*, June 1814.—"M. Aubertot, of the department of Cher, and owner of furnaces, and other works in excellent condition and management, which he superintends personally, made several years ago, a great many experiments to discover some means of economizing the amount of fuel used in the working of iron, either by endeavouring to introduce the operation by catalan furnace or otherwise. He was led to try what could be accomplished by making use of the flame which passed out of the blast and refining furnace. He first employed it for the cementation of steel, in which he succeeded perfectly; then he used it for calcining lime, also for burning bricks and tiles. Afterwards he passed it into a reverberatory furnace, in which the temperature was raised sufficiently to heat the blooms and bars, for hammering the one and drawing the other out. Finally, he succeeded in producing all the above effects at one and the same time, by causing the flame to circulate through several furnaces side by side."

In 1834, M. Houzeau Muiren took out a patent for using the waste heat from the mouth of the blast-furnace, for carbonizing wood at the furnace of Bievres (Ardennes); in which he states, that twice the quantity of charcoal is obtained by treating the wood after his method, than by the ordinary way of burning in the woods. By the heat lost from the furnace, 100 parts of wood gave 35 of charcoal, and from 40 to 45 of *charcoal roux* (half burnt wood).

But after all, it is not to those who first applied this lost heat to economical purposes, that we are indebted for the practical information that is now in our possession; for had they made their arrangements so as to exhibit an undisputed advantage arising out of its adoption, it would not have been so tardy in its progress.

It is to M. de Faber Dufaur, superintendent of the iron-works at Wasseralfingen in the kingdom of Wurtumberg, that most of the credit is due for the present method of converting pig into wrought iron, by using and burning the gases that escape from the mouth of the blast-furnace. The best idea that can be given of the manner in which the operations are conducted in the above works, and the advantages accruing therefrom, is contained in the following short extract from a letter written by M. Grouvelle to M. Dumas:—

"The establishment at Wasseralfingen is supplied with ore, three-fourths of which is a hydrated oxide of iron, and the other fourth is an ore in grains. The influence of the first species of ore gave to the pig so bad a quality that it was used altogether for castings. M. Dufaur, by his processes, without altering the operations of the blast-furnace, now obtains from the pig a wrought iron of superior quality.

"The first gas furnace put in operation by him was a refining furnace, into which the pig metal was run as it issued from the blast-furnace, where the refining was executed with the air of the hot blast. From this the most beautiful results were obtained, and it worked regularly during the year 1837. In 1838 he erected a puddling furnace; and finally, in 1839 he completed his magnificent system for the fabrication of iron, by constructing a furnace for reheating and welding."

At Wasseralfingen there are now turned out annually, 1,000,000 pounds of wrought iron in various forms, made in these new furnaces, and owing to the deficiency of moving power, all the pig cannot be worked up. This operation of refining iron by the combustion of gas without any other fuel, has been in successful operation at the above locality for several years and it has been followed with a great improvement in the quality of the iron, and has reduced the loss to one-fourth of what it was originally.

This method of refining the pig has also been in active operation in a number of places, and whenever properly executed, is always attended with economy and success. M. d'Andelarre, in one of the departments of France, in a letter states, "our puddling furnaces, heated altogether by the gas lost from the mouth of the blast-furnace, has been attended with the most complete success, which rarely happens in the first attempts at the application of any improvement, which most generally require long experience. We lighted up our furnace on the morning of the 5th, and put in the first charge at 11 o'clock on the morning of the 6th, and shingled the same at 3 past 12. The accomplishment of results so quickly passed our expectations, resulting in—

"1. An economy of the total amount of fuel used in the refining of iron, (which, in a furnace with two doors, amounted, in 24 hours, to 6000 pounds bituminous coal, costing $12.)

"2. Improvement in the quality of the iron.

"3. The loss was very small, being 5 instead of 20 per cent., which it is by the old processes.

"4. The operations of the furnaces are much improved."

Here we see, that the experience of M. d'Andelarre accords exactly with that of M. Dufaur, and already have Russia, Prussia, Sweden and Germany sent commissioners to Wasseralfingen, to study the processes as they are there carried on. The Government of Wurtumberg have opened their works to the inspection of all who may wish to make themselves acquainted with their character.

The advantages arising from the employment of the waste gas from the mouth of the blast-furnace, is no longer problematical; and as some of those interested in the matter may not be acquainted with the method by which the gas is collected and employed, a few words explanatory of it will not be out of place.

The gas, as it rises through the fire room of the furnace, containing from 60 to 80 per cent. of the combustible effect of the fuel used, is made to pass into a chamber surrounding the upper and outer part of the fire room, some idea of which may be formed by the representation in fig. 1. B, is the mouth of the furnace; A A, gas chamber surrounding the upper part of the fire room; D D, pipes connecting the fire room and gas chamber; C C, pipes to carry off the gas, which is drawn out by means of blowing cylinders, and forced into the refining, puddling, or other furnace, through a number of small orifices alternating with other orifices, through which a cold or hot blast of air is thrown, that serves to keep up the combustion of the gas when once united; and by regulating the supply of air by means of stop-cocks, the maximum of heat can be obtained. In order to arrive at the maximum of heat, just sufficient air should be admitted to burn all the carbonic oxide and hydrogen contained in the gas coming from the blast-furnace. If the amount of air be too small, some of the combustible gases pass out unconsumed; if too great, the excess cools the furnace, and at the same time oxidizes the metals undergoing refining. The regulation of the supply of the blast is of the utmost importance, and is said to be easy of accomplishment. The differences between the reverberating furnaces worked in this way, and those in which coal is used, is that carbonic oxide with a little hydrogen is the fuel, and it is burnt by a full supply of air. It is hardly necessary to say more of the advantages that are to rise out of this important change in the working of iron; for there is no expense for fuel in the refining of the pig, as the gaseous combustible issuing from the mouth of the blast-furnace is more than sufficient to refine all the pig made from the furnace. The quality of iron is also improved as none of those impurities contained in the coal and other fuel can interfere in the working of the iron.

The sooner these modifications are introduced into our furnaces, the sooner we will be able to place iron in the market at a price to compete with that coming from any other quarter of the world, and entering our ports free of duty; at the same time, it will increase the value of those works whose wood land has been diminished by a too rapid and improvident use of fuel.

[To be continued in next week's Mining Journal.]

CLARKE AND VARLEY'S RESILIENT ATMOSPHERIC RAILWAY TUBE.—We briefly noticed, in last week's *Mining Journal*, that we had paid a visit to the establishment where working models of this ingenious invention are in operation. In the Number for 27th June last, we described the tube as then at work; since which some very interesting and economical improvements have been effected, to lessen the amount of friction, and prevent leakage, by rendering the valve as perfect as possible. We will repeat the general description of the tube, preparatory to showing the improvements which have since been made. The tube, instead of being cast, is made of rolled iron; a sheet of the length intended for the tube, and about 2 in. wider than the diameter, has about an inch turned up at right angles, then rolled up and hammered into a tube—the flanges of which form the longitudinal lips, and which are kept closed by the spring or resilience of the tube itself; these lips are lined with leather, fixed to the iron by Jeffries' marine glue, and thus form an air-tight joint, when lubricated with a greasy substance. The tubes are perfectly cylindrical, and, in laying them, they butt against each other, and a strap of the same metal is lined with leather and marine glue, and screwed up to the lips with bolts and nuts; besides these braces there are, at every 6 ft., stays curved to the outside form of the tube—one fixed, and the other working on an axis underneath, and both bolted to the lips; thus allowing one side of the tube to recede on the passing of the coulter of the piston: this coulter was much wider behind than in front, where it terminated in an edge; and this shape was to open as little as possible in front, while sufficient space was clear behind the piston, for the admission of air as it proceeded. Another form of tube was, by forming the lips into a trough, and inserting a rope valve well lubricated, which appeared to answer perfectly. Several very considerable improvements have, however, since been made—and first with respect to the valve; instead of lining the two flat lips with leather, one lip is made curved, the other flat; a continuous bar of iron, convex on one side to fit the curved lip, and of convenient length, is covered with stout leather, and the convex part is then firmly screwed up to the curved hollow lip; the flat lip then presses by the elasticity of the tube against the leather-covered plane side of the iron bar, and forms a perfectly air-tight joint, even without lubrication. To lessen still further the friction, the patentees have reduced the coulter to the least possible thickness consistent with strength sufficient for its connection with the train; and, by the addition of a small friction wheel, running on the surface of the tube, it can be moved by the slightest pressure. In thus reducing the breadth of the coulter, there is not sufficient opening for the admission of air behind the piston; to effect this, a continuous bar of iron runs the whole length of the tube, and which, by short levers, acts upon the moveable stays in such manner, that a small wheel, attached to the carriage, pressing on this bar, pulls back the stays, and opens the lips to the necessary width, which, of course, close again as the piston proceeds. On a length of 12-in. tube, about 60 ft., which is now at work, the mercury in the barometer shows little variation when the air is rarified, and the pump left at rest, even for two hours—a fact which shows the perfection of this description of valve. It is estimated, to the greatest nicety, that a mile of this tube can be laid for (at most) 2000*l.*—while a cast tube on the other principles, costs at least 5000*l.*; and it would seem that, on the resilient system, there is very little chance of leakage, and, consequently, that enormous source of loss of power avoided. We understand, 150 yards will very shortly be laid down on the Blackwall line, which will be a certain test of its success or otherwise; we have no doubt of the result. Among the various proposals for applying the principle of atmospheric propulsion to the raising of ore from mines, we have not before seen a model erected for the purpose: Messrs. Clarke and Varley have erected a length of their tube, about 10 ft. or 12 ft. high, fitted up for this purpose, and which, from its lightness and economy, we should think would be very applicable, if the principle is found to answer, for great perpendicular heights; the tube is placed nearly perpendicular, and the box or carriage made, of course, with the opening upward—the side being attached to the piston instead of the bottom, as on a railway: the effect produced by this model was successful. The inventors of the resilient atmospheric tube have applied the principle to various occupations—such as pile driving, a machine for excavating railways, pumping, &c.—all which subjects we shall refer to, illustrated by diagrams.

AN INDICATOR SAFETY LAMP FOR COAL MINES.—Among other novelties of Messrs. Clarke and Varley's inventions, is a safety lamp of a new, peculiar, and simple principle, intended to hang from the roof of a mine. The air is admitted for combustion in precisely the same manner as in the common argand lamp, through the centre of the cotton, and the bottom orifice is covered with a piece of close wove wire gauze; the wick is inclosed in an air-tight strong glass globe, from the upper portion of which a tube leads off to a small air-pump, which can be kept in motion by the engine; this continually ejects the gases formed by combustion of the hydrocarbons, and the flame is kept constantly renewed by a strong current of air through the gauze. On any approach of carburetted hydrogen, the colour of the flame would immediately indicate it, as the explosive mixture, passing through the body of the flame, would be harmlessly consumed in the lamp, and immediate steps could be taken for avoiding and removing the danger. This principle appears to possess perfect safety; the difficulty would be the carrying long lengths of tube to the shaft, where a motion from the engine could be obtained to the gas pump.

IMPROVEMENTS IN ALKALI MANUFACTURE.—Mr. Bell, of the Alkali-Works, South Shields, has obtained a patent for condensing the muriatic acid evolved in the manufacture of sulphate of soda, and for condensing the acid fumes or vapours which arise in the manufacture of sulphuric acid. For the first method, the patentee employs several pipes or tubes placed vertically—say, four—about 20 ft. high, and 6 ft. in diameter; these cylinders are filled with coke, in pieces about the size of a walnut, and water is allowed to flow in small streams through the coke; they are so arranged that the acid vapours will ascend through one, and descend through the next, alternately—and with these is combined a peculiar means of obtaining a draft through the condensers; this is done by making the flue from the last terminate in a cone, and a jet of steam applied just below the orifice. To prevent any escape of deleterious vapour into the atmosphere, a close cistern is placed around the condensers, having one or more partitions descending from the top, and dipping a few inches in water. The second part of the invention consists in employing similar condensers for collecting the fumes in the manufacture of sulphuric acid; in this case, water is not allowed to descend through the coke, but a jet of steam is admitted into the first condenser, as also into the sulphur chamber. The patentee states, that he obtains a much greater produce of acid from the condensers than from the sulphuric acid chamber in the same time, and can thus add more burners to the chamber, and he has obtained acid by using the condensers only.

LIFE ASSURANCE.—A question of much importance to life assurance companies has lately been decided by the judges in the Exchequer Chamber on a bill of exceptions in an action brought by the representatives of Schwabe against the Argus Life Assurance Company. The judges have determined that a party assured, holding his policy in his own hands, who may commit suicide, forfeits his policy, and that the office is not bound to pay the amount. This decision settles the law on a point upon which doubts had heretofore existed. The Argus Company, who, before trial, had offered to return all premiums paid with interest, on the opinion of the judges in their favour being declared, immediately renewed their offer, and have now repaid to Schwabe's representatives the whole of the premiums received, with interest at 4 per cent., amounting to 969*l.* 8s. 7d. The company have at the same time resolved in future to return to the representatives of any party assured in their office, who may commit suicide, the gross amount of premiums paid on the assurance.

Mining Correspondence.

ENGLISH MINES.

BARRISTOWN.—The lode in the 24 fm. level is without alteration; in the western end, at the 18 fm. level, the lode is large, producing from 1½ and 2 tons per fm.; we have intersected a part of the east lode in the winze, sinking (in the west end) under the 12 fm. level, it is about 1 ft. wide, and producing 1 ton per fm.: we expect to find other parts of the lode under this. In the end, west from Nangle's shaft, the lode will produce 1½ ton per fm., and the end, east of the shaft, 1 ton per fm. No alteration in the adit end east: nothing has yet been discovered at Clon Mines.—T. Angove: August 21.

BEDFORD UNITED.—At Wheal Marquis, the lode in the 80 fm. level east is 2 ft. wide, composed of spar, mundic, and ore. In the 70 fm. level east the lode is 2 ft. wide, and worth 8*l.* per fm.; and in the stopes, in the bottom of this level, the lode is worth 15*l.* per fm. The 58 fm. level east is stopped until the 70 fm. level is further advanced, so as to admit of proper ventilation. At Ding Dong, there has been no lode taken down in the 24 fm. level west since last report. At Wheal Tavistock, Phillips's engine-shaft is sunk 6 ft. below the 47 fm. level—lode 2 ft. wide, producing good stones of ore; the lode in the 47 fm. level west is 2 ft. wide, producing a little saving work—very kindly; in this level east, the lode is 2 ft. wide, composed of spar, mundic, and ore. In the 35 fm. level, east of the cross-course, the lode is 3 ft. wide, and very promising. The south engine-shaft is now 16 fms. 5 ft. below the surface; the lode much the same as for some weeks past. There is no alteration in the adit level.—James Phillips: August 25.

CALLINGTON.—In presenting you with a report of our operations through the past six months, I beg to say, that we have fixed a 42 fm. forcing lift of pumps in Johnson's engine-shaft, at the 112 fm. level—the shaft is now down 9 fms. below the same; present price for sinking, 22*l.* per fm. At this level the lode has been cut, and driven on rather more than 20 fms.—in the greater part of this ground it has been much disordered, intermixed with fragments of the rock; the back will work on tribute at rather a high figure; in the north end, at this time, the lode is improved—being more compact, composed of carbonate of iron, quartz, and lead; four men are working in the back of this level on tribute. The 100 fm. level north is now 51 fms. from shaft—the whole of the ground driven through will pay for taking away; 12 men are working here in the backs; in the end, the lode continues productive; this level is extended south 40 fms., and most of the back will pay for working—six men now being employed in the same; the present end is opening ground that will set at a moderate tribute. The 90 fm. level is driven 52 fms. south of the shaft; has been suspended for some time past—the air being deficient. We expect to resume it in a short time; the lode is worth 10*l.* per fm.—ground hard for driving. This level is driven 80 fms. north, through productive ground; the lode in the present end is 10 in. big, intermixed with silver-lead ores; 18 tributers are working in the back of this level, and the whole of the ground north, with a great portion of the south, will be taken away. The 80 fm. level north is 110 fms. from shaft; the lode in the present end is 8 in. big, producing silver-lead ores—12 men are working here on tribute. The count-house shaft is sunk to the 70 fm. level; whim plats are now being cut, and the necessary preparations making for drawing from the same. The north engine-shaft is sunk to the 100 fm. level; the whim plat now in course of cutting, and cross-cut driven 4 fms. towards the lode. Should the underlie continue as fast here, as what it has in the levels above, in this part of the mine (being three times as quick as it is in the south part), we may calculate on driving 11 fms. more before we meet with the same. The 90 fm. level is driven north of the Kelly Bray lode 40 fms., and now 50 fms. from our boundary. Two pares (six men) belong in this back—the one at 8s., the other at 6s. 8d. in the 1*l.*; they are getting wages. In the present end the lode is poor; the south level is extended 45 fms., now about 5 fms. short of reaching the copper lode; two pares (five men) are working here—the one at 3s., the other at 6s. 8d. in the 1*l.*, on the value of the lead, and making average wages; for some time past, we have had the ground much harder here than we were led to expect from what we had seen in the levels above. In the 80 fm. level we found this soft, and more congenial channel of ground, some fathoms farther to the south of the copper lode, than we had seen it in either the 70 or 60 fm. levels; and now calculate the same to be dipping faster to the south than we formerly anticipated, and look forward to an improvement, after cutting through the copper lode; the present back will set at a moderate tribute. On the Kelly Bray lode, at this level, we have driven east from the engine-shaft 27 fms., and met with a cross-course, just now driven through, 4 fms. wide. From the bearing of the Holmbush cross-course (recently furnished us), size, and character, this must be the same; the lode to the west of the cross-course is rather small, composed of chlorite, mundic, and spots of copper; to the east we have not seen it. The 80 fm. level is 101 fms. south of the shaft, and 6 fms. short of having reached the count-house shaft; a little to the south of which, there is an east and west course; near the intersection we have met with some good bunches of lead in the upper levels. The whole of the ground opened will be taken away; 13 men are working in the back of this level. The 70 fm. level is 26 fms. north of the cross-cut; have met with some good ore ground in driving the same. The back, so far, is very poor, and the lode in the present end also; operations are suspended here for a time for want of better ventilation. The south level is extended 4 fms. south of the count-house shaft through tribute ground; at this level we have driven east on the copper lode 38 fms. Different branches have sprung off to the south; to one of these we have driven a cross-cut 4 fms., and find no improvement; another we have driven a short distance on with no better prospects. The main part, or the one keeping the true bearing of the lode, is nothing more than a mere division of the country, without copper ore; where these branches meet, stones of copper ore are met with. The 80 fm. level is driven west on this lode some fathoms beyond the ore ground in the 70, without any profitable results, neither are there any tributers working on this lode at the present time. The former small winding engine is newly erected, fitted up with condensing work, and attached to a new crusher on the one side, and 12 stamp heads on the other. This will now enable us to keep forward the dressing of our ores, both crop and halvans, in a proper manner—no other machinery being required for the prosecution of these mines. A decrease will take place in our expenditure; at the same time, we look forward to increased returns.—J. T. Phillips: August 24.

CUBERT SILVER-LEAD.—There is no alteration in the ground in the engine-shaft since last week's report. The 25 fm. level, going east, is worth about a ton of lead per fm.—a promising end; the western end here is also improved, the lode is 1 ft. wide, soft white spar and lead, and will yield about one-third of a ton of ore in a fm. The 15 fm. level, going east, is still in gossan, but without lead just now; the 15 going west is a very promising level, the lode 1 ft. wide, very soft, white sugary spar and lead, worth nearly a ton of lead ore per fm. The shaft in the moor is holed to the 15 fm. level, and is an excellent job, that part of the mine being now ventilated, and a new pitch will be set there on setting day, at a moderate tribute. The appearances of the tribute pitches, on the whole, are pretty fair. Lead ore sold 22d inst., to Messrs. Walker, Parker, and Co., Chester, 30 tons, for 11*l.* 16s. per ton.—Richard Rowe: August 21.

EAST TAMAR CONSOLS.—At Whitson, we have put the men to drop the lift in Hitchins's shaft, to fork the water, and cut down the ground from the 46 fm. level to the 54, which, I hope, will be done by the latter part of this week. In the 46 fm. level, south of Hitchins's shaft, the lode is 1 ft. wide, saving work; in the 46 fm. level north the lode is small, in shidy ground. In the 36 fm. level north the lode is 14 in. wide, producing good stones of silver-lead ore. At Furzehill, Hanson's shaft is sunk below the 30 fm. level 4 fms. 5 ft.; the lode is 2 ft. wide, saving work. In the 30 fm. level, south of Harrison's shaft, the lode is 3 ft. wide, good work. The backs and pitches are looking very promising.—B. Robins: August 24.

GUNNIS LAKE.—At Chilsworthy, the lode in Bailey's engine-shaft (now 11 fms. 4 ft. under the adit level) is upwards of 2½ ft. wide, composed of gossan and spar, with good stones of grey ore—altogether the lode was never more promising than at present.—W. Richards: August 25.

HAWKMOOR.—The lode in the 15 fm. level, east of Hitchins's shaft, is 2 ft. wide, composed of capel, spar, mundic, and ore, producing some saving work—altogether a very kindly lode.—P. Richards: August 25.

HOLMBUSH.—The ground in Hitchins's shaft is much the same as last reported on. The ground in the 120 fm. level south is favourable for driving; in the same level, driving east, the lode is 12 in. wide, composed of mundic, spar, and rich stones of copper ore, and has been gradually improving since we resumed driving it. In the 110 fm. level, west of Hitchins's shaft, on the north part, the lode is still split in branches, being near the cross-course; in the same level, driving south, the lead lode is 4 ft. wide, producing stones of rich silver-lead. We have suspended the 100 fm. level, west of Hitchins's shaft, on the north part, and removed the men to clear out the attle from the 110 fm. level, east of Hitchins's shaft, preparatory to driving it towards Wall's engine-shaft, in order to prove the nature of the ground, whether it is through the hard floor of ironstone or not, as well as to prove the lode; in the winze, sinking below this level, the lode is 18 in. wide, and worth 10*l.* per fm. In the 100 fm. level south the lead lode is 5 ft. wide, composed of soft spar, prian, flookan, and stones of lead; in the same level, driving north, the lead lode is 3 ft. wide, composed of flookan, spar, and spots of lead; the pitches in the back of this level are producing some rich silver-lead. In the 90 fm. level south the lead lode is 3 ft. wide, principally flookan, with spots of lead; in the 90 fm. level, west of Hitchins's shaft, on north part, we have also suspended and removed the men to fork out the water from the winze, sunk below the 110 fm. level, on the north part, in order to drive west, to communicate to the 120 fm. level east; this will be laying open and draining ground that will set on tribute.—William Lean: August 25.

KIRKCUDBRIGHTSHIRE.—The lode in the end driving east, at Stewart's shaft, is large, and producing 1 ton of lead per fm.; the same may be said of the end driving west. There is a splendid course of ore in the sole of this level, about 6 fms. in length from end to end, including the shaft, worth 20*l.* per fm., the sinking of this shaft will be resumed immediately; we cut plat and barrow road by the shaft. Crouch's shaft is being suspended till we get the water wheel to work, as the water was found too quick to be kept by our present means. The lode in the adit looks much the same as before reported; our dressing floors will be ready in two or three days to commence dressing. I consider we shall be able to ship 20 tons of lead in course of three or four weeks.—J. Buzzo: August 22.

LEWIS.—At Wheal Nutt engine-shaft, the lode in the 60 fm. level end east is 18 in. wide, producing some tin—a promising lode; the lode in the 60 west is 18 in. wide, yielding some tin. The lode in the 50 east is 2 ft. wide, worth 3*l.* per fm. for tin; the lode in the 50 west is 2½ ft. wide, producing some tin. The lode in the 40 fm. level end east is 2½ ft. wide, worth 50s. per fm. for tin. The lode in the 30 fm. level end east is 3 ft. wide, worth 40s. per fm. for tin; the lode in the 30 end east, on south branch, is 8 in. wide, worth 50s. per fm. for tin; at this level we are also continuing our cross-cut south, from Oak shaft, ground favourable. Scadden's lode, west of the cross-cut, at the 20 fm. level, is 1 ft. wide, producing some good quality yellow copper ore; the tributers in the back over are making fair wages at 10s. in the 1*l.*, for saving the copper ore; we are still continuing to drive the cross-cut north at this level, to intersect the north lodes, ground favourable. Boswergie Town lode, in a winze sinking under adit level, is 20 in. wide, producing some good work for tin, and very promising. The lode in the Bush shaft is 15 in. wide, producing some tin, and very kindly. We have also commenced to get out the foundation for a steam stamps, and hope to be in course to build in about a week.—Samuel S. Noell: August 22.

MENDIP HILLS.—The ground in Stainsby's shaft continues much the same as last reported; the lode is about 4½ feet wide, composed of carbonate of lime and quartz, with small spots of lead; this shaft is sunk 19 fms. below the 18 fm. level; I think it advisable to sink it 1 fm. deeper than cut a small plat, as we are getting so deep and unhandy with the tackle. At Barwell's shaft the lode is greatly increased in size; it is now about 7 ft. wide, presenting favourable appearances. At the 20 fm. level, north of Somers's shaft, the lode continues much the same, producing stones of good quality lead; the ground in the 20 fm. cross-cut new shaft continues hard for driving, so that our progress in ventilating this part of the mine is but slow.—F. Harpur: August 24.

SILVER VALLEY.—We have intersected another small vein at the 40 fm. level, and cross-cut extended north. This vein, and the two spoken of in my last report, appears to be approaching each other both east and west, and we have, consequently, proposed to drive east on the blendic, and west on the chloritic vein; and we hope that, on their forming a junction, as they did in the level above, the lode will be found more productive, as, although the quantity of tin in the bottom of the mine is little, it is, nevertheless, mixed with other metalliferous ingredients. The lode in the 80 fm. level east is small and unproductive; in the western end it is 4 ft. wide, containing a little tin and copper ore; the lode in the winzes, sinking below this level, is 3 ft. wide, consisting of quartz, spotted with blende and yellow copper ore, with a little chlorite on the foot wall, containing a small quantity of tin of good quality. The lode in the 20 fm. level west is 3½ ft. wide, spotted with tin, assuming a very promising appearance; the pitches are opening favourably, and the tributers are getting wages. At the silver mine, the lode in the 10 fm. level west is improved—the parts are fast approaching each other, and they contain a little silver; in the western end the lode is also improved, and contains a little lead very rich in silver, which is a very favourable indication. Oak shaft, near the cross-course, is being cleared and secured 12 fms., in the bottom of which gossan still appears—some of which contains both copper and silver; there is every appearance of the lode being productive at no great distance from the shaft. The lode at Wheal Sisters is without any alteration. We have been offered for No. 1 parcel of tin, 50*l.* 10s. per ton; and for No. 2, 42*l.* 10s., delivered on the works. The parcels of silver sold—No. 1, at 43*l.* 6s.; No. 2, 23*l.* 17s. 6d. per ton. Messrs. Stainsby, Fearon, and Johnson, visited us to-day, and very minutely examined everything connected with our surface operations, and derived every information respecting our underground workings, appearances, prospects, &c.—J. Prince: August 24.

TRELEIGH CONSOLS.—In the 100 fm. level, east of Christoe, the lode is 2½ ft. wide, just as last week—stones of ore, but not of much value; in the 100, west of ditto, a small branch in this end, without mineral. In the 90, west of ditto, the lode is small, no ore (in elvans); in the winze, below the 90 east, the lode is 2½ ft. wide, worth 10*l.* per fm.; in the 90, east of Garden's, the lode is about 6 in. wide, very little ore—in the elvans, as the 90 west from Christoe; in the 90, west of ditto, the lode is 4 ft. wide, worth 40*l.* per fm., with a very promising appearance. In the rise above the 70, west of Good Fortune, the lode is 3 ft. wide, but little ore. In the winze below the 60, the lode is 3½ ft. wide, worth 5*l.* per fm.—holed with a borer to the 70 rise. In the 60, west of Symons's, the lode is 1½ ft. wide, very little mineral. In the 50 cross-cut north the ground is much harder—now giving 8*l.* per fm.; we hope to see more lodes soon; in the 50, west of ditto, the lode is 20 in. wide, unproductive. In the 34, west of ditto, the lode is 18 in. wide, without ore. In the 20, west of ditto, the lode is 1 ft. wide, no ore; in the adit, west of ditto, the lode is 8 in. wide—mundic, jack, &c., not unkindly. In the west shaft the men have done but little in this; they have been employed putting down house lift at Garden's. The pitches at the back of the 90, east of Garden's, and the back of the 90, east of Christoe, are looking very well.—W. Symons: August 22.

TRETOIL.—Since the meeting in April we have opened 138 fms. of ground on tutwork in levels and winzes, fixed a plunger in Henwood's shaft from 70 to 50 fm. level, changed the rods, &c. The shaft is down 8 fms. below the 70 fm. level, the lode in it is 18 in. wide, composed chiefly of spar and ore, saving work, but not rich; it is a kindly lode, and letting out much water, and, from its present appearance, is likely to improve shortly. We are driving the 70 and 60 fms. levels west; and have lately holed winzes from the 60 to 70, and from the 60 to 50, so that these ends are properly ventilated, and are in full course of driving. In the 70 fm. level west the lode is 1 ft. wide, saving work. In the 60 fm. level the lode is 1 ft. wide, producing a little ore. From the appearance of the lode in the bottom of the 40 fm. level, further west, we speedily expect an improvement in this level. The lode in the 70 fm. level east is 15 in. wide, a good orey lode, in soft ground, and letting out much water—this end is 15 fms. from the cross-course; a winze has lately been holed on this end, from the 60, in which we have had a good course of ore that held down within 3 fms. of the back, and, from the dip of the ore, it appears that the 70 will shortly improve. In the 60 east the lode is at present unproductive. The lode in the 50 east is 1 ft. wide, producing some good grey ore, and opening ground that will set on tribute; this end is 35 fms. west of East Tretoil engine-shaft. We have driven east from John's engine-shaft, at the 50, on John's lode, 8 fms.; the lode is 15 in. wide, producing good stones of firm yellow ore, and is a kindly lode; there is no other level driving on this lode, consequently the ground above and below remains unexplored. The cross-cut, at the 40, south of Russell's shaft, is driven 47 fms.; there are about 20 fms. more to drive to cut the Mine Park lode, if it keeps its regular underlay, which, from its present appearance at the adit, there is very little doubt. There is a small lode at the adit, underlaying south, betwixt the present end at 40, and the Mine Park lode, which must be met with before the Mine Park lode is intersected, unless it joins that lode before it arrives at the 40. We are driving this end (the 40 south) as fast as possible, and, from present appearances, it will take at least five months to reach the Mine Park lode, during which we may fairly expect to sink Henwood's shaft 10 fms. deeper, drive several fathoms east and west at the 80, drive to and cut through the cross-course at the 70; and also drive at least 20 fms. on John's lode, east of new engine-shaft; that level being at present 30 fms. west of the cross-course, will then be near it; we have also our chances in the western levels. The mine is now in full course of working; the engine works well, and is sufficiently powerful to prove the mine effectually. Having so many places in operation, a speedy increase in the samplings may be fairly calculated.—Henry Williams: August 25.

VIRTUOUS LADY AND WHEAL BEDFORD.—We have this day inspected these mines, with especial reference to an improvement that has recently taken place in the lode at Wheal Bedford, and beg to submit our report thereon. The 20 fm. level has been driven for several fathoms on the course of a large strong lode, but, until the last few fathoms, without much variation. Since that it has improved in character, containing some spots of ore, prian, and mundic, with here and there a few small vugs. On Saturday last a large vug was cut, rising in the back of the end 7 or 8 ft., and dipping in the bottom at an angle of 30 degrees. How far it extends in this direction, we have not been able to ascertain—it being at present filled with water; we did, however, insert an iron bar upwards of 9 ft., without finding a termination. The ground around the vug consists of spar towards the back, but in the bottom of a fair prian, with some stones of very good ore. They have saved about 5 cwts. since the vug was cut, as there is a considerable quantity of water constantly coming into it; and being below the bottom of the level, we would recommend bringing up the deeper level, now about 7 fms. back, from the present end, and will come in from 4 to 5 fms. below.—B. Cooke; A. W. Martyn; T. Williams: August 10. P.S.—I have been agent of the mine for several years past, and consider the present appearances very similar to those seen before the discovery of the last great bunch of ore, which returned thousands of tons.

UNITED HILLS.—At the 90 fm. level, in the eastern end, we are still driving south; we have driven about 18 in. since last reported, which is ore of fair quality; in the western end the lode is 3 ft. wide, 2 ft. good ore. In the 80 fm. level the lode is 3½ ft. wide, orey throughout, of a coarse quality. In the 70 fm. level, eastern end, the lode is 18 in. wide—8 in. of which good ore; this end is a little improved since last survey day; west of James's shaft, we have commenced driving north to cut the north part of the lode. In the 50 fm. level no alteration since last week; in the shallow adit the lode is 3½ ft. wide—2 ft. producing ore of average quality. At Wheal Charles, in the 50 fm. level, the lode is 14 in. wide, poor. In the 40 fm. level the lode is 3 ft. wide, producing ore throughout of average quality—looking promising. At Wheal Sparrow, in the 40 fm. level, the lode is 18 in. wide, unproductive for copper. In the 30 fm. level, west of Turner's shaft, the lode is 3 ft. wide, orey throughout, of average quality; the lode in the winze is 18 in., ore of fair quality.—Thoma Trevenen; Robert Williams: August 25.

WEST WHEAL JEWEL.—In the 115 fm. level east, on Wheal Jewel lode, the lode is 1 ft. wide, producing little ore—ground much the same for driving as when last reported. In the 100 fm. level east, on the same lode, the lode is 2 ft. wide, worth 5*l.* per fm.; in the 100 fm. level west, on the same lode, the lode is 9 in. wide, unproductive—ground very hard for driving. In the 85 fm. level west, on the same lode, the lode not taken down in the past week. In the 12 fm. level west, on Tolcarne tin lode, the lode is 2 ft. wide, worth 25*l.* per fm.; in the 12 fm. level east, on the same lode, the lode is worth 5*l.* per fm. In the winzes, in the bottom of the deep adit, west of old sump shaft, on Tolcarne tin lode, the lode is worth 7*l.* per fm.—R. Johns: August 24.

WHEAL BENNY.—I beg to inform you, that we completed our engine, and everything attached thereto, on Saturday last: the following work being done in the short space of time of 22 days—viz.: cutting ground for the wheel pit, building the walls for ditto, putting in wheel, making rods, bobs, and saunders, &c. She went to work on the 22d instant, driving at the rate of 10 strokes per minute, with not more than half its power on, getting the water in fork in one hour, and is doing good duty ever since. I expect to get the shaft cleared up and divided down by the latter part of another week. The shaft now sinking is only 10 fms. east from the lode, near the river, which is of high promise. The average sample, as it is broken down, produces 7½ per cent. for copper, at a depth of only 16 feet from surface.—T. M. Penaluna.

WHEAL CONCORD.—I beg to inform you, that the water is now drained to the bottom of the mine, and a few days will enable us to complete cutting down the engine-shaft, and casing it to the 50 fm. level; after which we intend to sink in the bottom of the shaft (which is 4 ft. below the 50) for a cistern, &c., and fix the lift from thence to the 28 fm. level; this will complete the preparations for sinking. We cannot as yet see the lode in the 50 fm. level, in consequence of its being full of stuff, which I am getting cleared with all possible expedition. In the 38 fm. level east the lode is 3½ ft. wide, principally quartz and mundic. I intend to get this level cleared west as soon as we can conveniently get away the stuff. We are clearing and repairing the 28 fathom levels east and west; in the former we have proceeded 16 fms. from shaft, and in the latter 26 fms. I shall continue to urge on the operations in this level to develope the lode further west. We have cleared and secured the 20 fms. level east from the engine-shaft for 32 fms.; and from the best information I can gain, the whole ground cannot be much a-head of us. On approaching it we shall extend this level on to Snell's shaft, which will set the eastern part of the mine in good working order. In driving the 10 fms. level south from Snell's shaft, we have intersected the lode, and commenced driving west on it; the lode is 2½ ft. wide, consisting of decomposed slate (flookan) and mundic, possessing good indications. In the same level, coming towards this from Arnold's, the lode is large, with a leader of excellent work, 18 in. wide; we have passed through this course of lead for 7 fms., and it still holds equally good in the end, which I consider highly flattering for the eastern level coming in below. By our exertions we have much improved the ventilation in different parts of the mine, which I hope to be able to accomplish more effectually when the old mine workings are cleared out. We have about 9 tons of silver lead dressed on the floors, and about 5 tons more in a forward state; so that this, added to what we are now raising, will enable us to sell a moderate sized parcel at no very distant period. Upon the whole, I consider our prospects very good, and our different operations are progressing satisfactorily.—J. B. Clymo.

WHEAL LOUISA.—The engine-shaft is down 14 fms.; we have an increased number of branches, all tending towards the lode, spotted with ore; and, from the present appearances of the ground, and the branches through which we are sinking, my opinion is strengthened, that we shall have a good lode at the 20 fm. level.—James Chynoweth: August 25.

WHEAL MEXICO.—In extending the 20 fm. level south on the cross-course, we have intersected two parts of the lode—the first is about 3 inches wide, composed of flookan, and a small branch of spar; the other part is about 16 in. wide, composed of flookan and carbonate of iron, spotted with lead and copper and mundic—on which part we have driven 1 fathom east, and about 3 fathoms west.—W. Knott: August 26.

WHEAL TRELAWNEY.—The engine-shaft is 10 fms. below the 32 fm level. The lode in the 32 fm. level, south of the shaft, is 2 ft. wide, and worth 18*l.* per fm.; in the same level, north, it is 3½ ft. wide, and worth 15*l.* per fm. The lode in the 22 fm. level north is 3 ft. wide, and worth 16*l.* per fm.; the lode in a winze, sinking under the 22 fm. level, north of the shaft, is 3 ft. wide, and worth 20*l.* per fm.; in the winze, south of the shaft, it is 2½ ft. wide, and worth 16*l.* per fm. The lode in the 12 fm. level north is 1 ft. wide, and worth 6*l.* per fm. Trelawney shaft is 11½ fms. under the surface.—P. Clymo, Jun.

WHEAL WALTER.—The London shaft is 22 fms. deep; price for sinking, 6*l.* per fm. (eight men), water still easy. Last week we had a floor of spar, mundic, and sprigs of lead and copper ores in this shaft. We have opened 3 fms. on A lode, which is 2 ft. wide, composed of felspar, gossan, and flookan; price 2*l.* (two men). We have sunk 4 fms. below the adit on B lode; in the bottom of this winze the lode is 3 ft. wide, composed of spar and mundic, forming two walls, with a very regular underlay of 2 ft. in a fm.; price 3*l.* 10s. (four men). The adit is progressing favourably from the London shaft towards the north lodes; 2*l.* per fm. (four men). The smith's shop is completed, and a smith at work at 2*l.* 10s. per month. I have been to Plymouth, and brought home the engine, which is not damaged in the least.—James Opie: Aug. 27

[FROM CORRESPONDENTS.]

Botallack Mine.—A very considerable improvement has been made in the 100 and 125 fm. levels, the ends in each producing very good copper ore.

Broomfield Mine.—They are proceeding vigorously with the workings here, and at present endeavouring to lay open the lode east and west, to ascertain if the bunch of ore seen at the 13 fm. level holds down.

Hewas Consols (near St. Austell, Cornwall).—These mines have commenced working by a most respectable company. About 24 years ago, they were the most productive for tin of any mine then at work; and it was astonishing to notice the expenditure which was then from time to time thrown away in machinery, erections, &c., and any one, who was acquainted with mining operations in its varied branches, could not but conclude that the mines were totally abandoned for the want of judicious management. However, since these mines have ceased to work, there have been side lodes discovered, both north and south of the main lode, and run parallel with all the former workings, and the same caunter branches and veins of tin run through and intersect them; and those lodes have been seen above the adit, and several hundred pounds' worth of tin have been raised from those lodes to that depth, and are standing from the adit to the 126 fm. level in whole ground; there is no doubt, but that they will prove as productive, if not even more, than the main lode has. These new discoveries, together with the price of tin—the moderate dues being obtained for 1-30th dish—the very great improvements in machinery—the innumerable alterations which have of late taken place in the mode of stamping and dressing—likewise, the astonishing advantages resulting from the application of acid on the ores—cannot but prove an important benefit, and become a characteristic feature in mining, and have a very great tendency to remunerate the adventurers with considerable large profits. The management is under the superintendence of Captain John Carthew, of the Balleswidden Mines, in whose ability, as a practical mining agent, the greatest confidence may be placed.

Penbugle and Lancarfe.—This mine is situated about one mile to the north of Bodmin on an extensive valley, with hills gently rising on either hand, allowing a most favourable opportunity for proving the lodes, which are running transversely into those hills. Some operations were commenced a few years since, and an adit driven for a considerable distance on the course of the lode, which consisted of a beautiful kindly spar, immense quantities of mundic, and other indications very favourable to the presumption, that it would make ore in large quantities in depth. At the time of the difference between the Sicilian Government and this country, with regard to the importation of sulphur, great quantities of mundic were shipped off from this lode, for the purpose of manufacturing that article; more recently some individuals, being impressed with the old adage, "That mundic always rides a good horse," obtained a grant of the sett. It was found, on further examination of the lodes, that they could be traced a considerable distance into other lands, a grant of which lands has since been obtained, and the whole forms one of the most extensive and promising setts the neighbourhood can produce. The shares were all taken up about eight months since by a very respectable body of adventurers, who, after having had the different lodes in the sett inspected by competent agents, determined, on the strength of the reports made from these inspections, to give the mine a full and fair trial; they, consequently, decided on the erection of a steam-engine, with the other necessary apparatus. The engine was completed, and went to work on the 24th of June last, since which the operations have been chiefly confined to sinking the shaft, by which it was intended to have cut the lode at the depth of about 40 fms. In going down, the country appeared of the finest description, and the ground of the finest quality in the opinion of practical miners, as to its congeniality for making ore. Another decidedly favourable indication, which has been met with in sinking the shaft, is the many small branches leading to the lode—these branches consist principally of flour spar, with spots of lead ore carrying silver. This circumstance, together with that of the lode running nearly north and south, leads to the conclusion that it is a lead lode. Practical miners, who have worked for years in East Wheal Rose, have given it their decided opinion, that the indications are fully equal to that productive mine, in which they have worked. From the favourable impressions made by the recent appearances of the branches leading from the lode, it has been decided on driving to cut the lode at the 16 fm. level, when it is fully concluded that some returns will be made. The shares are held firmly, and but few persons are disposed to sell, as they have been taken up principally by parties with the intention of working the mine, and not, as is too often the case, for the sake of jobbing.

WHEAL BENNY.—The water-wheel went to work in pretty style on Saturday, and gave much satisfaction to those of the adventurers, and others, assembled to watch her first movements. Among those present were J. Tool, Esq., J. Peter, Esq., J. R. Oliver, Esq., S. B. Sergeant, Esq., Messrs. F. and T. Prout, T. Oliver, Matthews, and others, with Captain T. M. Penaluna, the resident agent, who all expressed themselves highly satisfied with the energy and perseverance which had been displayed in getting the machinery to work in so short a space of time, only 22 days having been occupied in the completion of the work, including construction of pit launders, &c.

WHEAL FRANCO.—Considerable alterations have taken place at this mine; the agents having resigned their situations, two others have been appointed. The mine is now being worked with spirit: the engine-shaft, which was down 32 fms. three years since, is now resumed, to sink another lift of 15 fms.: this ought to have been done more than two years since, and proves the truth of the old adage, "too many cooks spoil the broth." About 3000 tons of ore, producing 14,000*l.*, have been raised principally above the 20 fm. level; the returns are now 140 tons per month, cost 500*l.* A new wheel, with 12 heads of stamps, has just been put to work; this will give an addition to the returns, as the halvans have been growing on the old stamps. Preparations are making to erect two small wheels, to work the jigging machines, by which a considerable saving will be effected, and the ore dressed better. Everything for the future is intended, so far as possible, to be let on tribute—the evils of the tutwork system having been fully developed in this mine. Pitches let by the fathom, in consequence of the men having no other interest than the measurement of the ground, and were worked at a loss, have since been let at a fair tribute, which gave good wages to the men, and profits to the adventurers. From the character of the lode in the bottom level, there is every appearance of this mine being a lasting one, and will pay a good profit, if properly managed, for which there appears to be every preparation making.

BANWEN IRON COMPANY.—In our advertising columns will be found a notice of this company—formed for the purpose of working a valuable mineral property, consisting of iron ore and anthracite coal, extending under 573 acres, and situate in the immediate vicinity of the Ynniscedwyn, Onllwyn, and other prosperous iron-works in South Wales. In the present highly encouraging state of the iron trade, and the certain prospect there is of an increasing demand for the purpose of carrying out the completion of upwards of 3500 miles of railway, already sanctioned by the Legislature, with the increased number of purposes to which it is continually being applied—the economical and spirited working of such a property cannot fail to be highly remunerative; and we are the more particularly impressed with this, on finding that, as the veins of ironstone are together 8 ft. in thickness, and crop out to a distance of 2000 yards in length, a vast quantity may be obtained by patching, without pits or machinery of any kind; the coal can also be worked by one level, estimated to cost 2013*l.*—the only additional expense being the wages and royalty. The capital proposed is 100,000*l.*—of which, however, only 60,000*l.* will be called for, which has been deemed ample for opening out this property, for the erection of six smelting furnaces, 34 ft. high, and all other works necessary for turning out 14,000 tons of pig-iron per annum. At an estimate of 4*l.* per ton, therefore, this 14,000 tons of anthracite pig would return a profit of 35 per cent.; and as this description of iron has never sold for less than 8*l.* per ton, it follows, even on this low estimate, that a profit would arise of 12½ per cent. on the capital employed; in this calculation the cost of making, rent, royalty, wear and tear, and expense of management, are estimated at 2*l.* 10s. per ton. This property is well situated for transit of the mineral, as, by laying down 1½ miles of tramway, it will be placed in communication with all the railways in the neighbourhood—the Swansea Canal, and the ports of Swansea, Neath, and Britton Ferry. Limestone can be delivered on the works from the quarries, four miles by railway, at a cost of 2s. per ton, while, in the estimate above-mentioned, 3s. has been charged; a lease is obtained for 60 years, at a rent of 92*l.* 5s. for surface, repaid by tenants; and royalty of 7d. for coal and culm, and 1s. for iron ore, subject to a dead rent of 450*l.*; that is, when the royalties amount to this sum, no further is payable; and when they do not, the amount must be made up. Under every view of the prospects of this company—its situation, position, and character, of the minerals—it does appear one likely to return a very large and permanent dividend to the shareholders, and add to the supply of some of the best iron which comes into the British market.

CALLINGTON MINING COMPANY.

The quarterly meeting of the shareholders in this company, was held at the offices, 44, Finsbury-square, on Thursday last, the 27th instant.

RICHARD HODGSON, Esq., in the chair.

The advertisement, convening the meeting, having been read, the CHAIRMAN read the following DIRECTORS' REPORT.

In presenting you with the quarterly accounts and reports of these mines, the directors have every reason to be satisfied with the state and prospects of the adventure. One of the chief points to which your directors' attention has been directed during the past three months, has been the development of the Kelly Bray copper lode to the east of the great Holmbush cross-course, where it is anticipated it will improve materially, the Holmbush lode having produced great wealth to the east, while they, like the copper lodes in this mine, are poor to the west. A large cross-course has now been cut, as appears by Capt. Phillips's report, but it seems doubtful whether this is the great cross-course, or a second one, discovered also in Holmbush, 30 fms. to the west, and which then runs parallel with the lead lode. Three of your directors have lately visited the mines, and consulted with Mr. Johnson and Capt. Lean (of Holmbush), who seem to consider the one now cut is not the great Holmbush cross-course but the second one, and which will unite with our lead lode driving north; should this be the case, we have reason to anticipate an improvement in the lead lode driving north, and, in any event, there seems little reason to doubt of a material improvement in the copper lode, when seen to the east of the great cross-course. Your directors' attention has also been unremittingly directed to the reduction of the dues in the Duchy grant; and they are happy to be able to state that, by the kind concession of the Duchy officers, they have succeeded in obtaining a reduction from 1-16th to 1-20th, so long as the trials on the copper lode are being continued, which will contribute somewhat to the expenses of these important trials. During the last six months a considerable sum has been expended in new machinery, and the count-house shaft being now sunk to a 70 fm. level, we shall be in a situation to return a much larger quantity of ore from this part of the mine than heretofore, which will tend to swell the samplings during the next six months.

The following statement of accounts was also read:—

Accounts for January, February, and March, 1846.

January cost				£1580	4	11
February ditto				1733	4	1
March ditto				1783	15	8
Disbursements—	Directors	£50	0 0			
"	London management	50	0 0			
"	Discount	0	15 9			
"	Law charges	25	0 0			
"	Auditors	4	4 0			
"	Printing	2	17 6	132	17	3
First dividend, paid 18th March				1000	0	0
Reserve fund				100	0	0
Balance				1265	18	2
Total				£7595	18	1
Balance at the annual general meeting, held on the 6th of March last				£1611	18	2
January ores		£2111	0 2			
February ditto		1965	11 3			
March ditto		1740	5 3			
Copper ores sold		167	3 3	5983	19	11
Total				£7595	18	1

Accounts for April, May, and June, 1846.

April cost				£1746	5	4
May ditto				1654	2	1
June ditto				1825	19	0
Disbursements—	London management	£50	0 0			
"	Directors	62	10 0			
"	Discount	50	8 11			
"	Law charges	25	0 0			
"	Interest	1	8 10			
"	Printing	2	16 0			
"	Auditors	4	4 0	196	7	9
Second dividend, paid 20th May				1000	0	0
Reserve				100	0	0
Ore returned				1664	18	5
Total				£8187	12	7
Balance				£1265	16	2
April ores		£1741	5 10			
May ditto		1685	19 1			
June ditto		1623	17 1			
Copper ores sold		201	18 8	5253	0	8
Part of returns sold				1623	19	6
				8142	16	4
Balance				44	16	3
Total				£8187	12	7

A report from Capt. Phillips, the agent, was read, which will be found among our usual mine reports.

Mr. HERON having inquired the nature of one *item* in each quarter's accounts of 25*l.* for law charges, the CHAIRMAN explained, that it was a continuous bill extending over two years, amounting to 58*l.*—that, in the early part of the year, application having been made for payment, and the directors thinking some items exorbitant, paid 25*l.* on account, that was the item in the first quarter—that, on subsequent application for a settlement, they paid 25*l.* in full of all demands, and that was the last item—there had been no law expenses during the previous year. There would be some small charges during the present year for the new lease from the Duchy, but the reduction of the dues would be ratified without charge. On being applied to as to the present prospects of the mine, whether they had still the same good opinion of the undertaking as at the last meeting, and if the four 1*l.* dividends would be kept up during the year, Mr. STAINSBY (who, with Mr. Fearon, was on the mine the greater part of Tuesday last) said, that he confidently calculated that the next four months' cost would be reduced from 300*l.* to 400*l.* per month, and that their raisings would be increased to 100 tons of ore per month, as the count-house shaft was now down to the 70 fm. level, as four additional stamp heads would be immediately erected to return the very great accumulation of halvans which had taken place; and as both the north and south shafts were down 10 fms. deeper, he had no doubt such would be the result, or that the dividends would be regularly forthcoming; so far from altering their opinion of the prosperity of the undertaking, they considered the mine was looking far better than three months since.—Mr. WINSTANLEY objected to the cost of printing the accounts, he thought the clerks, in a large establishment like theirs, ought to copy them.

After some general conversation, and on the motion of Mr. ANDREW, seconded by Mr. HERON, the report and accounts having been adopted,

Mr. FIELD would make a few observations on his own position. The directors had done him the honour, on a former occasion, to elect him as one of their body, and he regretted they had not fixed upon a more efficient person; the shareholders had kindly confirmed such election, and it was his wish to do his best for the interests of the proprietors; he was sorry, however, that his avocations took so much of his time, that he did not consider he could sufficiently discharge the duties of a director, and he was ready at any moment to resign it into the hands of a more efficient gentleman.

Mr. HERON said, he knew many of the Callington shareholders, and they all placed the greatest reliance in Mr. Field; he hoped he would not think of resigning. Several proprietors requested Mr. Field to let well alone, and that gentleman returned thanks for the confidence reposed in him; he had no wish to leave, as he had found every suggestion he had made to his colleagues most courteously received and seriously discussed, and he believed there was every attention paid to their interests, and no want of skill in management. There were some small routine matters, which he thought might be amended, and such suggestions, he had no doubt, when found right, would be adopted.

Mr. HERON then moved, and Mr. LEE seconded, a vote of thanks to the directors for their attention to the company's interests; and, Mr. HODGSON having replied, the meeting separated.

TRETOIL MINING COMPANY.

The annual general meeting of the shareholders in this company was held at the offices, George-yard, Lombard-street, on Tuesday last, the 25th inst.,

JOHN EDWARDS, Esq., in the chair.

Mr. H. THOMAS (the secretary) having read the advertisement convening the meeting, the CHAIRMAN observed, the principal object of their meeting was to lay before them a statement of accounts, and an elucidation of the present state and prospects of their affairs—he then called upon the secretary to read the following report:—

REPORT.

The report and statement of accounts which the directors have to submit to-day embrace the period which has elapsed since the meeting in April last, when the accounts and the general business of the company were gone into in detail, and every shareholder furnished with a statement. The directors beg also to refer to the report of their experienced mine agent, Capt. H. Williams, for full information respecting the progress of the mine during that period and its present prospects (for which see our usual mining reports). Allusion was made, at the last meeting to the amount expected to be realised: the steam-engine on East Tretoll, and some of the materials, of the estimated value of about 350*l.* still remain unsold, and the amount stated as to be received on the reissuable shares has fallen short by 47*l.*; whilst, in the very inactive state of the share market, it has not been practicable to realise on the shares intended to be issued to complete the nominal capital of the company—viz. 5000*l.* These circumstances, unfortunately, leave the financial statement in a more unfortunate condition than was contemplated. It has, however, been thought advisable to carry on the works energetically, both in deepening the mine and extending the levels; and although the success hitherto has not been equal to expectation, yet the late improvement in the returns, and the rapid approach to another, the 80 fm. level, give fair hopes of increasing the monthly returns, and thereby rendering the loss comparatively small, till the Mine Park lode, apparently the most important object in the sett, is cut, and in some measure proved by extending on its course. Most of the shareholders are aware, that an arrangement was come to some time since, for referring the claim of Messrs. Tregellas and Lambe, in respect of the interest held by them in East Tretoll, to arbitration; and, for that purpose, it was referred to Captain Peter Clymo, who was well acquainted with the mine, to decide betwixt them: an award has, accordingly, been made in favour of Messrs. Tregellas and Lambe of 225*l.* The directors are, however, of opinion, that the memorandum of agreement, which formed the basis of the reference, has been misunderstood—the purport being, that every point connected with the cost and returns of the East Tretoll Mine, to the end of the reference, should be taken into consideration—whereas the award has been specifically made at the time of the consolidation only. On this subject the directors will be glad to have the opinion of the shareholders, and are desirous of rendering the fullest explanation; with respect also to any portion of the accounts, or any information relative to the mine, any inquiry which may be thought advisable by the shareholders to institute or suggest, the directors will feel a pleasure in giving thereto their fullest co-operation.

From the statement of accounts, it appeared that there was a balance in April last of 3038*l.* 4s. 5d.; mine cost and expenses to Midsummer, 2073*l.* 3s. 7d.—together, 5111*l.* 8s. By ores sold, 950*l.* 1s. 4d.; materials ditto, 124*l.* 10s.; calls, 1773*l.* 15s.—together, 2848*l.* 6s. 5d.; showing balance against the company of 2263*l.* 1s. 7d.; from which deduct calls due, 661*l.* 10s.; materials to sell, 350*l.* —together 1011*l.* 10s.; showing a balance, at Midsummer last, against the mine, of 1251*l.* 11s. 7d.

Mr. HEALE asked some questions relative to driving the level to cut the Mine Park lode, as, from the circumstance of its having already been a long time about, and that it would still take them five months to reach the lode, it appeared to him that the shaft could not have been sunk in its proper place.—Mr. THOMAS explained, that the shaft had been sunk to work Slide Park lode, where large quantities of ore had been raised; that they had taken advantage of this shaft to drive from, to cut the Mine Park lode, as the cheapest way of reaching it; and if the ground remained as it was at present, five months would be about the time required to reach it.

The CHAIRMAN then introduced the subject of the 200 shares in East Tretoll, held by Mr. Tregellas, and the arbitration case, alluded to in the directors' report. At the time of the consolidation of the Tretoil with the East Tretoil Mines, Mr. Tregellas held 200 shares in the former, which were mortgaged to Mr. Lambe for a sum of money, and both gentlemen refused to consent to consolidation; it had been decided, at length, to leave the matter to arbitration, and Capt. Peter Clymo, having formerly been officially connected with the property, was mutually chosen referree, when he gave as his award 225*l.* to the holders; this the directors could not consider an award, as he had only estimated the value of the shares up to 1841—the time of the consolidation, when his instructions were to make his calculations of the value of ores raised, machinery, cost, &c., up to a certain date in the present year.

Mr. LEA (a director) said, that had such calculation been fairly made, the shares would be considerably in debt, instead of the company owing them 225*l.* —The agreement and some correspondence was read, and a long conversation ensued, in which Messrs. Tucker, Gibbon, Heale, Lea, and others, took part, and a general feeling prevailed that Capt. Clymo's decision was certainly not an award, in the legal sense of the term, and that the amount was also exorbitant; and, after the report and accounts had been adopted unanimously, the following resolution was accordingly passed:—"The agreement of reference made between the directors and Messrs. Lambe and Tregellas being produced and read, and also the award of Capt. Peter Clymo, it was resolved, 'That the directors, through their secretary, write to Mr. Lambe, objecting to the award, on the ground of not being in accordance with the agreement of reference, but that the directors have power to receive an offer of a reduction of the sum of 225*l.*, and to negotiate and fix on a sum to be paid.'"

The CHAIRMAN then observed, that he was sorry to say, that they could not go on without the sinews of war, and it would be necessary to make a call, which he hoped the meeting would agree to; the directors had made it as low as possible to go on properly with the works—they, therefore, proposed a call of 5s. per share, payable on the 19th Sept. next, which was unanimously agreed to.—It appeared that, at a special meeting in April last, Mr. Heale had mooted the subject of quarterly meetings, instead of annual ones—that the shareholders might be oftener made acquainted with their affairs; a resolution on this subject was moved by Mr. HEALE, seconded by Mr. TUCKER, and carried unanimously.—Mr. FIELD, who had lately been in the neighbourhood of the mine, said, he had not been underground, but, from all he could hear, he believed that the prospects were much more cheering than heretofore, and the raisings had increased 20 tons per month; there was an important improvement in Lanivet, an adjoining mine: he eulogised the character of Capt. Williams, and believed he would not exaggerate the prospects of a mine in his reports, but the contrary.—Mr. HAWKEN (who lives 14 miles from Tretoil), bore out Mr. Field in his statements; and a vote of thanks and confidence having been voted to the directors, the meeting separated.

EAST POOL.—At the account meeting, held on the 18th August, the cost for June and July was shown to be 960*l.* 17s. 11d. By copper ores sold June 4, 618*l.* 6s. 11d.; dues, 20*l.* 12s. 2d.=597*l.* 14s. 9d. By tin ores, 312*l.* 2s. 4d.; dues, 10*l.* 8s. 0d.=301*l.* 14s. 4d.; debts dues from tributers, &c., 7*l.* 4s. 2d.—total credits, 906*l.* 13s. 3d., or a loss of 54*l.* 4s. 8d. on the two months' working. A balance of 609*l.* 4s. 4d. at last account pays this, and leaves now in hand 55*l.* 19s. 8d. The water is to be let in to the 70 fm. level, which will lessen the cost of working 100*l.* per month.

EAST WHEAL ROSE.—At the two-monthly meeting for the months of May and June, the accounts for these two months were examined and passed, as follows—viz.: Mine cost, 4743*l.* 0s. 5d.; merchants's bills 1687*l.* 13s. 4d.; surgeon and club, 65*l.* 17. 3d.; income tax, 100*l.*; coals, 250*l.*; interest on ore bills, 26*l.* 11s.; dues, 1117*l.* 19s. 9d.; materials, 161*l.* 5s. 11d.; dividend 50*l.* per 1-128th share, 6400*l.*—together, 14,552*l.* 7s. 8d. By ores sold, 19,543*l.* 0s. 3d.; Cargoll adventurers, for agency and supplies, 131*l.* 7s. 7d.=19,674*l.* 7s. 10d.—leaving a balance in favour of the mine of 5122*l.* 0s. 2d.

SOUTH WHEAL TRELAWNEY.—A general meeting was held at Webb's Hotel, Liskeard, on the 12th August, at which the accounts were exhibited, showing the working cost, from January to June, to be 523*l.* 19s.; paid Mr. George Raby, for lease, 500*l.*; leaving the mine in debt 7*l.* 17s. The accounts were allowed; a call of 4*l.* per share was ordered to be payable on the 14th Sept. to the purser, or Mr. T. Hacket, Birchin-lane; Mr. Raby to be paid the last instalment of 500*l.* on the 29th Sept.—It was also resolved—That from the reports made by Captain Penrose and Captain Lean, the latter be directed to prosecute the present workings as he, with the advice and concurrence of Capt. Penrose, may think desirable; and then report the same, before it shall be fully agreed where it will be proper to sink the contemplated engine-shaft.—That Mark Matthews vacate the situation he now holds, and that he be given a month's notice thereof to quit his present employ as an agent of this mine.—That Capt. Lean be empowered to appoint a person in the stead of Mark Matthews, on similar terms, in whom he can place the confidence required.—William Glencross, Esq., was in the chair; and Messrs. G. and J. Raby, J. Soby, W. Murray, jun., and J. Milroy, were present.

ST. IVES CONSOLS.—At the accoust meeting, held on the 18th instant, the accounts to the 9th June were examined and passed as follows—viz.: Labour, carriage, &c., 3212*l.* 8s. 6d.; coals, 285*l.* 6s. 6d.; merchants' bills, 934*l.* 2s. 1d. —together, 4431*l.* 17s. 1d. By tin sold, 5353*l.* 6s. 2d.—leaving a profit of 921*l.* 9s. 1d., to which add balance to end of March last, 627*l.* 2s. 4d., makes, 1548*l.* 11s. 5d., from which deduct dividend of 10*l.* per 94th share (940*l.*), leaves a balance in favour of the mine of 608*l.* 11s. 5d.

WHEAL MARGARET.—At the account meeting, held on the 25th instant, the accounts up to the end of June were examined and passed, as follows—viz.: Labour, carriage, &c., amounted to 1472*l.* 4d.; 108*l.* 5s. 3d.; merchants' bills, 486*l.* 1s. 10d; together, 2066*l.* 7s. 5d. By amount for tin sold, 2911*l.* 9s. 7d.; leaving a profit of 845*l.* 2s. 2d.,—which, added to balance to end of March, 313*l.* 11s. 9d., makes 1158*l.* 13s. 11d.; from which deduct dividend of 8*l.* per 1-112th share, made at the meeting, leaves a balance in favour of the mine to the amount of 262*l.* 13s. 11d.

WHEAL SPEARNE.—At a meeting, held 22d August, the accounts showed the labour cost for April, May, and June, as 917*l.* 5s. 3d.; merchants' bills, 161*l.* 16s. 9d.—together 1079*l.* 2s.—By tin sold, 1260*l.* 10s. 3d.; leaving profit of 181*l.* 8s. 3d.; which, with balance of 88*l.* 7s. 6d. in hand from last account, makes 269*l.* 15s. 9d.; from which deduct dividend of 192*l.*; leaves present balance of 77*l.* 15s. 9d. in purser's hands.

WHEAL TRELAWNEY MINING COMPANY.—At a meeting of adventurers, held at Liskeard, on Tuesday, the 25th inst., the accounts were presented, showing amount of May costs, as 546*l.* 17s. 4d.; June, 556*l.* 7s. 2d.; bonus paid to Rev. Dr. Honey, for sett of field, called Furze Park, 1200*l.*—2303*l.* 4s. 6d. By lead ores sold 28th July, to Messrs. Mullins Brothers, and Co., 1599*l.* 4s. 6d.; balance in hand, 883*l.* 19s. 9d.—1983*l.* 4s. 5d.—leaving balance against the company, 320*l.* 0s. 1d.—It was then resolved—That the accounts of May and June be allowed and passed, and that the bonus of 1200*l.* be paid to the Rev. Dr. Honey for the sett of his field, called Furze Park; leaving a balance against the adventurers of 320*l.* 0s. 1d.—The following report from Capt. P. Clymo, jun., was read to the meeting:—"The engine-shaft is down to the 42 fm. level, and we expect to cut the lode at this level by the end of November next. The lode in the 32 fm. level, south of the shaft, is 1 ft. wide, and worth 6*l.* per fm.; in the same level north it is 2½ ft. wide, and worth 18*l.* per fm.; in a winze, sinking below the 32 fm. level, south of the shaft, the lode is 1½ ft. wide, and worth 15*l.* per fm. In the winze, sinking under the 22 fm. level north, the lode is 4 ft. wide, and worth 25*l.* per fm. The lode in the 22 fm. level north is 3 ft. wide, and worth 28*l.* per fm. The lode in the 12 fm. level north is 18 in. wide, and worth 7*l.* per fm. We are getting on very well with the sinking of the new engine-shaft, and hope to communicate with the 22 fm. level in about three months. We are also progressing very satisfactorily with the building of the new engine-house, and we calculate to get the engine to work, so as to draw the water from the 22 fm. level by the end of the present year. From our prospects, we calculate to raise about 60 tons of lead per month, and after we cut the lode at the 42 fm. level, we expect greatly to increase our returns."

[ADVERTISEMENT.]

CONSOLIDATED COPPER MINES OF THE COBRE ASSOCIATION.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—I have just read, in your Number of the 25th July last, the report of the directors of the above company, at their general meeting on the previous day. I pity the awkward position in which the directors found themselves placed when no dividend was forthcoming, and when they saw no prospect of being able to declare one for a length of time. I know that, in situations so afflicting, it is not by any means unusual to have recourse to the paltry expedient of raising hopes for the future, especially when such hopes are unfounded. But I consider that it is unjust in the extreme to indulge in false representations, when these affect the interests of others. As I am willing to give the directors credit for honesty, I must presume that the fault is not to be attributed to them, but to their Cuba informants, who, doubtless, are desirous of keeping up the spirits of the unfortunate shareholders. In speaking of the litigation for the *Santuario* ground, after representing the right of the Cobre to be better than that of the Santiago Company, with regard to which I will make use of a line of Boileau's—"*L'un a tort, l'autre n'a pas raison*"—the directors say—"There still remains a THIRD PARTY, who have put in a claim for PART of the ground, but it is not considered that their claim is of any validity, as (or?) that it can occasion any serious impediment to the company getting a final decree in their favour. The directors, therefore, HOPE that at their next meeting IN JANUARY they will be able to congratulate the proprietors on being in possession, and working the ground." Here I think the directors *reckon without their host*. But to the point. Although the directors do not mention the name of that *third party*, everybody acquainted with the business knows well who the person alluded to is. As he is in Cuba, and, consequently, unable to answer for himself, I, as his nearest friend, think proper to explain to the shareholders and the public in general the error, whether involuntary or otherwise, contained in the words of the directors' report. They *say* that the *third party* had put in their claim for PART of the *Santuario* ground. But this is incorrect; the truth is, and the directors ought not to be ignorant of it, that the third party's (Mr. O*****) claim is for the WHOLE of the ground, not one particle less. As to the real validity of the claim, common sense amply suffices to decide on the following most correct facts, to which I defy contradiction. The *third party*, as well as both companies, have no other title or reason for the claim than the *denuncia* (denouncement of the mine before the properly constituted authority), and the priority of date, is, of course, the only rule for the grant; this is clear, simple, legal, and just—justice and legality are sometimes antipodes, but they are not so in the present instance. The *denuncia* was made as follows:—Mr. O***** (the *third party*) made it on the 18th February, 1835. When legal possession was about to be given to him, the chaplain of the *Santuario* (a chapel, with some buildings annexed, for charitable uses) started his opposition to the grant, on the score of the ground being already appropriated to religious, and, consequently, not to be applied to worldly, purposes. The judge found the opposition just, and in the name of *Heaven* the *grant* was refused to Mr. O*****. Four years and a half afterwards (observe, *four and a half years*), the Cobre Company entered its *denuncia* of the very same ground, and then the chaplain, and the consideration that the ground was appropriated to religious purposes, were no longer obstacles to the grant, as was the case when Mr. O***** previously denounced it. This is the true history of the affair. Now, with regard to the state and prospects of the lawsuit, the Cobre Company, for reasons well known to them as well as to myself, obtained a favourable decision in the first instance. But this is merely the first step. It remains for them to succeed in the *second* and *third* instance, on appeal being made in Cuba; and even after succeeding in these, they must come afterwards to Madrid, where Mr. O***** will not fail to bring the matter, if justice is not afforded to him at Cuba. This is the actual state of the question—this is the whole and simple truth. After making this explanation in justice to Mr. O*****, I leave the shareholders to judge whether there be any possibility of cause for congratulation *in January next*, when two long and tedious trials have to be gone through at Cuba, as well as an appeal to Madrid. They must not only prepare their patience for some years of uncertainty, but also their money—for although litigation at Cuba or Madrid is not so expensive or so tedious as in England, still they, as good mathematicians, can make an approximate calculation of the quantity of both that will be required, taking for basis the time and funds that have been expended in the first and simple step already gone through. I take leave of the matter for the present, but will refresh the memory of the directors and proprietors in January next, when that meeting approaches, in which the *hope* of congratulating the shareholders is, according to them, to be verified. A FRIEND OF THE THIRD PARTY.

Madrid, August 15.

WHEAL FRANCO MINE.

SIR,—I did hope this mine would have come under your notice in your mining tour; there have been some strange doings here, as well as in other mines, and the unfortunate shareholders have now a property greatly reduced in value, which would have been quite the opposite, had the mine been fairly treated. She is what is called a private mine, which (as, doubtless, most of your subscribers know) means, that the ores are sold by *private* contract, instead of public ticketing—consequently, it is only those in the immediate neighbourhood who know anything about her; in addition to which, not any of the adventurers, except those who can make it convenient to attend GENERAL meetings, are ever informed anything respecting her, *saving when calls are made;* consequently, the mine, or rather the shareholders, are at the mercy of a few individuals, and, from your knowledge of mining, you can well understand what this is. The remedy is in the hands of the shareholders. If they will be determined to send their ores to public sale, and publish their accounts every two months in the *Mining Journal*, the MINING PUBLIC will then have an opportunity of forming their opinion of Wheal FRANCO, and the result will be, the shareholders will soon find their property INCREASING IN VALUE. There is not anything in the actual state of the mine to cause such a depression as now exists—one proof of which is, that 148 tons of ore, of good quality, were sampled last month; and, having plenty of water power, is worked at much less expense, than if steam was required.—S. C.: *London, August 26.*

TRANSFER OF MINERAL PROPERTY.

TO THE EDITOR OF THE MINING JOURNAL.

Sir,—Any of your well-informed correspondents would confer a favour by informing me, through the medium of your Journal, of the usual course adopted in transferring the possession of a mine from one party to another; or in the landlord giving an individual, or company, possession, or right, of the underground royalty of any property—the trustees on the estate being, of course, in possession of the lands.—A. J.: *Ireland, August* 17.

CORNWALL NORTH DEEP ADIT.

TO THE EDITOR OF THE PENZANCE GAZETTE.

Sir,—An article appeared in the *Mining Journal*, about three years ago, on the south deep adit, to which the mines in Gwennap, have been so greatly indebted for their prosperity. The article states—that the longest branch of the adit from its mouth, at the village of Carmon to Cardrew Mine, was 5½ miles, and that its various ramifications extended 35 miles; that at Wheal Hope it was 70 fms. below the surface, while its average depth was about 40; that, allowing a breadth of 100 fms. on each side of the course of the adit and its branches, the area unwatered by it might be computed at 5500 acres; that it discharged 9000 gallons of water per minute, which, but for the adit, must have been raised to the surface by steam-power, and at an expenditure of 24,000 tons of coal, or 19,000*l.* per annum. I have given the above summary of the advantages derived by the south deep adit, with the hope of inducing lords and adventurers in mines to extend a north deep adit, which promises to be attended with results equal to those of the Gwennap adit. The north deep adit was opened in 1808, 15 ft. above high water mark, at Hayle, about 150 fms. north of Angarrack. It was driven 300 fms. in Mellinoweth Mine, and from thence extended 100 fms. into the tenement of Nanspusker, in Phillack, where it is about 5 fms. below the surface. It is now about 220 fms. from the bridge of Great Herland, where it would be 10 fms. below the deep adit of that mine—to this spot it might be driven for 50s. per fm., and, as it would unwater that mine to the depth of 10 fms., it would afford employment for many years to miners, in working away the backs of the rich lodes there, which have already yielded many thousands of pounds worth of ore. In thus extending it to the Herland Bridge, the lodes of Nanspusker and Trangle would be intersected, which tenements, although in the midst of a rich mining district, have never yet been tried by a miner. The adit, afterwards, if extended south through Angarrack Valley to Tappard Mill, will be 1000 fms. from Herland Bridge, and 27 fms. deep. In its progress south it would cut, at considerable depths, among other lodes, those of Great Herland and Great Wheal Alfred, East Wheal Alfred (in which a most important discovery of copper has lately been made); Wheal Prospect, Wheal Kayle, Wheal Carpenter, and the Relistian lodes. If continued south-east from Tappard to Wheal Clowance, it would be 40 fms. deep at that mine, and would intersect the lodes of Wheal Hope, Lamin, Wheal Unity, and Drewollas, from all of which mines large returns of tin and copper have been made. Another branch, before it reached Tappard Mill, might be driven to Wheal Providence, Lambo, Wheal Treasury, Wheal Maria, Wheal Strawberry, Binner Downs, &c. I hope that the suggestions which I have now ventured to make will engage the attention of gentlemen who have power and influence to carry out this great object, which would, in all probability, be of immense consequence to this important mining district.—R. Edmonds: *Penzance, August* 3.

P.S. The adit does not make a back in Mellinoweth till it reaches near the spot in Angarrack Valley, where the large embankment of the West Cornwall Railway is to be made.

Wheal Robert Copper Mine.—We are glad to hear that the prospects of this mine, situated near Tavistock, on the estate of J. Collier, Esq., are very flattering: a valuable lode has been cut within the last week or two, the indications of which led those experienced in mining to believe, that the adventurers will reap a rich harvest—indeed, many state that the discovery of ore is only second in importance to Wheal Maria.—*Plymouth Herald.*

Llenyi Iron-Works.—The mills belonging to the extensive forge in these works were opened in full play on Wednesday, the 18th Aug., in the presence of C. Bowring, Esq. (resident director), C. P. Hampton, Esq., manager of the Maesteg Works, Messrs. Thomas, D. Davis, Wm. Davis (agent), and several other gentlemen whose names we could not ascertain, many of them of scientific attainments; and to the gratification of all beholders, the works were pronounced to be most complete. The feelings of the forge-manager (Mr. Jones) must, indeed, have been of a most gratifying nature, as must also those of Mr. Anthony, the fitter-up. The crowd gave loud tokens of joy to the hills, which responded to the sound. The sparks which proceeded from the rolling mills were quenched in sparkling champagne; the proceedings were characterised with the utmost enthusiasm.—*Merthyr Guardian.*

The new iron-works in Fifeshire have proved most successful, each furnace producing 30 to 32 tons per day, of excellent quality. The district abounds with minerals, so that a great benefit is thus secured to the working population of that place.—*Glasgow National.*

Irish Marble.—Among the numerous articles brought from Ireland during the past week may be particularly mentioned, as not being usually supplied from that quarter, 38 blocks of marble from the county Galway.

The Amygdaloid Stratum of North Derbyshire.—More various opinions have been expressed as to the origin and nature of this stratum than probably of any other formation. Whitehurst, in his day, laboured untiringly to prove it of volcanic origin; and his authority on the subject has been received, in the Peak in particular, as valid and unquestionable. This stratum, so apparently peculiar, has excited the notice of other geologists of celebrity; St. Fond descended many mines in the Peak some years ago, to ascertain the truth of Whitehurst's assumption, but the result of his researches was, that the stratum was of certain aqueous origin. Whitehurst's opinions on this singular formation was attacked a few months' back by a local geologist, in a series of papers in the *Derby Reporter*; and the recent theory of Capt. Morton, R.N., on the origin and nature of the "Giant's Causeway," and "the wonders of Staffa," give countenance to the opinons expressed in opposition to Whitehurst. That the amygdaloid stratum of the Peak is of aqueous origin there can be no reasonable doubt; it is now found to contain fruit organic remains, a circumstance fatal to Whitehurst's theory. Because this stratum (in many places 100 fms. thick) the greatest mineral treasures are supposed to exist, which supposition will ere long be fully proved. Great trials are now in active progress; and if the result be favourable (of which there is little doubt), the Peak will be emerged in unparalelled mineral riches. From scientific considerations, it is presumed that an aqueous origin of this stratum is by far more certain of subter-mineral riches, than a volcanic origin of this formation. Hence, the anticipation of a forthcoming time of ample prosperity, is now in the locality in question, greatly indulged in by miners—masters and men.—*Correspondent of the Sheffield Iris.*

Curious Discovery.—While workmen were engaged raising the black-band ironstone, at the open cast on Bell's holm, for the Lugar Iron Company, and after breaking up a large block about 4 or 5 ft. square, they discovered near the centre of it a toad. It was small in size, not much larger than a "skep-bee," and very black. As soon as it got quit of its ironstone prison, it commenced hopping off, until it got into a pool of water, and then it showed the same dexterity in swimming as those that are not accustomed to so long an imprisonment. The ironstone, where it was discovered, is from 3 to 4 ft. thick, and 30 ft. below the surface.—*Caledonian Mercury.*

MINE ACCIDENTS.

Condurrow Mine, Camborne.—As two miners, W. Rule and H. Osborne, were tamping a hole, the charge exploded, and injured both—Rule very severely.

Consols Mine, Gwennap.—H. Verran was killed by falling down an old shaft.

Charlestown.—J. Nancholas was killed by a fall of earth, while blasting.

Thornham, near Oldham.—A miner, named Pickey, was killed by a fall of earth at Messrs. Holt and Co.'s Colliery, at Hanging Chedder.

Hateley Heath, Hill Top, West Bromwich.—W. Bennett and J. Moore were killed by two different falls of coal in the colliery of Mr. Davis.

Thornley Colliery.—W. Bell, switch keeper, was killed by the wheels of a train of carriages going over him.—J. Harbron was crushed by the falling of a large stone in the B pit.

Cwmbargoed Colliery.—D. Lewis has died from the injuries he received from an explosion of fire damp, which occurred at this pit on the 30th July.

Walker Colliery, near Newcastle.—T. Shield, aged 11 years, was killed here.

Wall's End Colliery.—G. Walker, aged 11, was killed in the C pit.

Bull Holes Colliery, Bilston.—T. Cooper was killed by a fall of coal.

Burroughs, near Bilston.—J. Homer was killed at Messrs. Parish and Pearson's.

Old Park Colliery.—G. Langston was killed by a fall of coal.

Holytown, near Glasgow.—As a young lad, named Stewart, and his father, were working at the No. 6 pit, Carfin, the lad fell a distance of 14 fathoms, and was sadly injured.

Stanton-by-Dale.—J. Shaw died from a blow on the head from a whimsey.

Denby.—T. Parkin was killed from one of the links of the balance chain giving way, and precipitating him a depth of 140 yards.

Moorsley Colliery, Durham.—J. Bell was killed by a fall of stone from the roof.

NEW PATENTS AND REGISTRATIONS.

Extracts from the Mechanics' Magazine Weekly List of English Patents:—

M. F. J. Delfosse, Regent-street, for improvements in preventing and removing incrustation in steam-boilers.

J. Bishop, Piccadilly, and Thomas Wood, Upper Barnsbury-street, Islington, for improvements in passengers' carriages.

T. R. Crampton, Adam-street, Adelphi, for improvements in locomotive engines.

A. Parkes, of Birmingham, for improvements in the manufacture of candles, and in preparing and combining certain animal, vegetable, and mineral substances, applicable to the manufacture of candles, and other purposes.

J. Murdoch, Staple-inn, patent agent, for a process for making a composition or artificial stone applicable to building and other useful purposes.

H. Bessemer, Baxter-house, Old St. Pancras-road, for certain improvements in railway-engines and carriages, parts of which improvements are applicable to the propelling of steam vessels, and to motive purposes generally.

CALEDONIAN RAILWAY.—At the Half-Yearly General

Meeting of the Caledonian Railway Company, held in the Royal Hotel, Edinburgh, on Wednesday, the 29th August, 1846,

J. J. HOPE JOHNSTONE, of Annandale, Esq., M.P., chairman of the company, in the chair.

The Secretary having read the advertisement convening the meeting, the following RESOLUTIONS were passed unanimously:—

1. That the common seal of the company be affixed to the register of shareholders, (which was accordingly done in presence of the meeting).
2. That the report of the directors (now read) be received and adopted.
3. That interest be allowed at the rate of 4½ per cent. per annum, payable half-yearly, from the 1st of October next, on all the original shares upon which all calls shall have been paid, or thereafter shall be paid, and upon all future calls; and in the same manner upon the new shares, from and after the date of their registration—provided always that no interest shall accrue to the proprietor of any share upon which any call or calls, or any part of any call, shall be in arrear in respect of such share, or of any other share, he'd by the same proprietor, during the period while such call or calls, or any part of any call, shall remain unpaid.
4. That, after the payment of one-half of the capital, the directors be authorised to borrow, on mortgage or bond, pursuant to the powers of the "Caledonian Railway Act, 1845," any sums not exceeding, in the whole, the sum of seven hundred thousand pounds (£700,000).
5. That Robert Monteith, Esq., David Dickson, Esq., Charles Murray Barstow, Esq., be re-elected directors of this company, and that John Hodgson Hinde, Esq., M.P., Humphrey Ewing Crum, Esq., be elected directors of this company.
6. That Donald Lindsay, Esq., be re-elected one of the auditors.
7. That the remuneration of the secretary and general manager shall be £1200 per an.

J. J. HOPE JOHNSTONE, Chairman.

The chairman having left the chair, it was further resolved unanimously,—

That the cordial thanks of this meeting be offered to the chairman and directors, for the able manner in which they have conducted the affairs of the company.

J. BUTLER WILLIAMS, Secretary.

CALEDONIAN RAILWAY COMPANY.—FIFTH INSTALMENT.

—Notice is hereby given, that the directors of this company have made a CALL, for the Fifth Instalment, of FIVE POUNDS per share, PAYABLE on or before the 30th day of September next, at the offices of the undermentioned company's bankers:—

LONDON—Messrs. Masterman, Peters, Mildred, Masterman, and Co., 35, Nicholas-lane, Lombard-street.
LIVERPOOL.—Messrs. Moss and Co.
MANCHESTER—Sir Benjamin Heywood, Bart., and Co.
EDINBURGH and GLASGOW—The Commercial Bank of Scotland, and the Edinburgh and Glasgow Bank.

Interest, at the rate of 5 per cent. per annum, will be charged on all calls not paid at that date.

No transfer of shares received at this office after the 3d September will be registered, until the call is paid, as the special notices will be sent to proprietors on the 5th Sept.

J. BUTLER WILLIAMS, Secretary.

Office, 122, Princes-street, Edinburgh, August 26, 1846.

CALEDONIAN RAILWAY.—REPORT of the DIRECTORS,

read at the Ordinary Half-Yearly Meeting of the shareholders, held on the 26th of August, 1846:—The directors have much pleasure in announcing to the proprietors, that the progress of the works in the last six months has been such as to confirm them in their anticipations of the completions of the whole line from Edinburgh and Glasgow to Carlisle, by the 1st of March 1848, as stipulated in the contracts. Impressed with the great importance of affording, at the earliest possible date, the accommodation that will be so urgently needed after the opening of the Lancaster and Carlisle Railway, they have used every effort to hasten the works, and confidently expect that a considerable portion of the line between Glasgow and Carlisle will be opened early in the autumn of next year.

Their attention has also been directed to that section of the railway which is to complete the communication with the north of Scotland by the junction with the Scottish Central,—with a view to its being opened simultaneously with that line.

For more particular information as to the state of the works, the directors have pleasure in referring the proprietors to the report of the engineers, hereto annexed.

The directors will now briefly review the result of their proceedings in Parliament during the present session.

The following bills, promoted by the company, have received the royal assent:—

1st. The Carlisle Deviation Bill—by which the access to the joint station of the Lancaster and Carlisle and Caledonian Companies will be improved, and the connection between the English railways and this undertaking perfected.

2d. The bill for amalgamating the Clydesdale Junction and Polloc and Govan Railways with the Caledonian Railway.

3d. The bill for effecting certain deviations and amendments of the Clydesdale Junction line.

4th. The Glasgow Termini and Branches Bill.

By means of the amalgamation with the Clydesdale Junction Company, and the powers contained in the last mentioned bill, the Caledonian Company will be enabled to obtain a direct access from the south to the Harbour of Glasgow, and to form a connection with the Greenock and Barrhead lines. The part of the bill by which power was sought to cross the Clyde by a bridge, and to form a station at Dunlop-street, although approved of by the committees of both Houses of Parliament, was struck out, in deference to the wishes of the Lords of the Admiralty, who objected to the crossing of the river at that particular point proposed. The directors trust that some means may be devised which will be unobjectionable to their lordships, and at the same time secure to the public and to the company the advantages of a commodious and central station.

5th. The bill for enabling the Caledonian Company to purchase the Garnkirk Railway. By means of this bill the Caledonian Company, besides obtaining access to the most populous part of Glasgow, has at the same time established a direct and unbroken connection with the Dumbartonshire line and the north-west of Scotland, which cannot fail to prove of much importance to the ultimate success of the undertaking. The directors are also glad to be able to report, that the revenue of the Garnkirk line has increased in such a way as to leave little room to doubt that its own local traffic (independently altogether of the increase which will take place when the Caledonian line is opened) will be more than sufficient to meet the guaranteed dividend.

6th. The bill for enabling the Caledonian Company to form a branch railway for connecting the Garnkirk Railway with the Castlecary or northern branch of the Caledonian, has also been sanctioned. The Airdrie Branch contained in this bill was rejected.

This completes the list of bills which have been successfully prosecuted during the present session. They are all measures which may be regarded as essentially necessary for developing and accommodating the traffic of the Caledonian line, and were, in fact, contemplated as component parts of the great through line of communication between Glasgow and the south, at the time when the Caledonian Bill was before Parliament.

The bills promoted by the company, which have been rejected during the present session, are:—1st, The Mid-Lothian branches, by which a communication would have been obtained with the pier of Granton and with the port of Leith.—2. The bill for authorising the construction of a branch to Dundyvan and Coatbridge.—3. The bill for authorising the construction of a branch to Langholm.—4. The bill for authorising the construction of branches to Dumfries.

As regards the first of these measures, the field is still open, and your directors conceive that it will be advisable again to apply to Parliament for power to execute this short line, which is essential for the convenience of the traffic that will pass along the Edinburgh branch of the railway.

The proposed branch to Dundyvan and Coatbridge was thrown out in consequence of the opposition of a rival project, which was adopted in preference to the line of this company. The rival line, however, runs into the Clydesdale Junction Railway, which now forms part of the Caledonian, and will act as a feeder to it. The objects which were contemplated by the Dundyvan and Coatbridge branch will thus, in some measure, be attained.

The Langholm branch was rejected by the committee of the House of Commons, who, at the same time, granted a rival line to Canobie, promoted by the Glasgow, Dumfries, and Carlisle, or Nithsdale Company. But this decision was reversed by the committee of the House of Lords. They rejected the Canobie branch of the Nithsdale Company, on the ground, as stated by the resolution of the committee, "that this line not being necessary to the establishment of railway communication between the districts traversed by the main line and the south, the future construction of it may properly be left open to the Caledonian Company, whose main line, according to the present plan, is crossed by it."

The rejection by the House of Commons of the proposed branches to Dumfries was, the directors are happy to say, counteracted by the committee of the House of Lords, who introduced special clauses into the Glasgow, Dumfries, and Carlisle Bill, enacting that "upon the Caledonian Railway Company obtaining statutory powers to accept of the lease aftermentioned, the company by this Act incorporated, and all other companies or persons claiming an interest in the railway hereby authorised as lessees, or assignees, of the company hereby incorporated or otherwise, shall, and they are hereby required, on the completion of that portion of the railway hereby authorised to be made, which lies between Annan and the Caledonian Railway, to grant and convey the said portion of the said railway, by deed duly stamped, in perpetual lease to the Caledonian Railway Company, subject to the conditions hereinafter contained."

These conditions are, that the Caledonian Company shall pay a fixed rent of 4 per cent. on the cost of this part of the line, together with half the profits, after deducting the fixed rent of 4 per cent., and a sum equal to 33 per cent. on the gross receipts for working expenses. This arrangement will effectually protect the interests of the Caledonian Company against undue competition on the part of the Nithsdale Company for the through traffic between Glasgow and Carlisle, which was the only point contended for by the Caledonian Company when opposing that line.

The directors have also great satisfaction in reporting the successful issue of their opposition to the proposed amalgamation of the Scottish Central and Edinburgh and Glasgow Railways. The Scottish Central line was last year advocated in Parliament, and sanctioned by the Legislature as forming, in connection with the Caledonian Railway, the Lancaster and Carlisle Railway, and the other lines which have recently been united under the name of the London and North-Western Company, the northern link of a great central trunk line of communication, by means of which the North of Scotland will be directly connected with the metropolis, and with the manufacturing districts of the west of England.

By the decision on the amalgamation bill, the interests of the public, as well as of the Caledonian Company, have been protected; and the system of north and south railway communication, previously sanctioned, has been preserved entire.

The directors, in concluding this review of the Parliamentary proceedings thus shortly detailed, may express their conviction that the position of the company has been established and strengthened; and that the result of the decisions of Parliament will be the means of securing the through traffic which was originally contemplated.

A resolution will be submitted to the meeting for the purpose of authorising the directors to borrow in terms of the Acts, as soon as one-half of the capital shall have been paid up. Facilities will thereby be afforded for prosecuting the works with vigour, without unduly pressing for payments from the shareholders. And, in reporting on future financial arrangements, it is highly satisfactory to the directors to be able to announce, that many of the shareholders, and among others the great southern companies, have intimated their intention of paying up at once the whole amount of the capital applicable to the shares held by them.

As a portion only of the new works contemplated at the extraordinary meeting of shareholders on 5th November last is at present to be proceeded with, not more than one-half of the new stock then created will be called up for those purposes. Each share will, however, require to be registered, and the holders will hereafter be consulted, to determine whether the balance should remain uncalled up, or should be applied towards the formation of future branches, or the redemption of guaranteed dividends.

In accordance with the wishes of a large body of the shareholders, expressed in numerous applications, and urged upon the directors at the last general meeting held in London, the directors have taken means for ascertaining the views of the proprietary in regard of the payment of interest on calls. They have to report, as the result of their investigation, that the feelings is all but unanimous in favour of such payment being made. The directors are, therefore, prepared to support resolutions for allowing interest at the rate of 4½ per cent. per annum on all calls paid up on the old shares from and after the 1st of October next, and on the new shares from and after the date of their registration.

The following directors retire by rotation at the present meeting, in terms of the Act—viz.: Col. Graham, Mr. Monteith, Mr. Dickson, Mr. Paterson, and Mr. Barstow; Mr. Lindsay, one of the auditors, also retires at the present meeting.

Your directors, in conclusion, submit to the meeting the balance-sheet, as certified by the auditors; also the annexed statement of the receipts and expenditure, as at 30th June last.

By order of the board, J. J. H. JOHNSTONE, Chairman.

General Account of the Receipts and Expenditure of the Caledonian Railway Company, to 30th June, 1846.

ORIGINAL CAPITAL.

Receipts—Capital raised to date				£600,402	0	3	
,, Transfer fees, &c.				300	0	8	—600,702 0 11
Expenditure—Before Act was obtained, £72,283 9 11							
,, Outstanding accounts, since paid	247	0	1	—72,530	10	0	
,, Since the Act was obtained (as per abstract)				475,288	12	8	
Balance				52,882	18	4	—600,702 0 11

ABSTRACT OF EXPENDITURE SINCE THE ACT WAS OBTAINED.

	To 31st Dec., 1845.	From 1st Jan. to June 30, 1846.	Total.
Engineering	£2196 16 10	£3211 18 6	£5408 15 4
Salaries	574 11 4	681 0 0	1255 11 4
Office expenses	82 15 2	266 19 5	349 14 7
Advertising, printing, & stationery	573 9 9	342 6 0	915 15 9
Directors' allowance	437 10 0	525 0 0	962 10 0
Travelling & expenses in London	435 11 9	348 16 6	784 8 3
Audit	—	105 0 0	105 0 0
Miscellaneous	412 0 11	382 2 10	794 3 9
Land and compensation	10222 14 4	12068 9 8	22291 4 0
Amount consigned in banks on account of land	15675 18 3	57542 6 4	73218 4 7
Rails	49812 18 7	63814 12 6	113627 11 1
Chairs	5592 12 9	21480 11 6	26993 4 3
Works	36803 1 5	189999 19 11	226803 1 4
Clergymen, schoolmasters, and police	129 3 0	1660 5 4	1789 8 4
Total	£122859 4 1	£352429 8 6	£475288 12 7

NEW CAPITAL.

Receipts—Deposits, &c.		£117963	3	2
Balance (advance from original capital)		27335	15	9—145298 18 11
Expenditure, as per abstract		£22627	14	1
Garnkirk Railway new works, waggons, and carriages		12500	0	0
Paid to Garnkirk Railway Company		110171	4	10—145298 18 11

ABSTRACT OF EXPENDITURE TO JUNE 30, 1846.

Parliamentary	£13966	3	9
Engineering	1992	11	5
Advertising, engraving, and printing	1718	7	4
Travelling, and expenses in London	284	14	6
Office expenses	657	6	3
Land	4008	10	11
Total	£22627	14	1

ENGINEERS' REPORT.

To the directors of the Caledonian Railway.

Gentlemen,—We trust the following report will enable you to furnish the requisite information to your proprietors at the approaching half-yearly meeting. The arrangement in the last report is adhered to in this, to enable you the more readily to make a comparison in each division of the line.

THE MAIN LINE.

FROM CARLISLE TO THE JUNCTION WITH THE WISHAW AND COLTNESS RAILWAY.

In *Cumberland*, the works commence at the central station in Carlisle, and every effort is making to obtain immediate possession of the land, so as to carry on the construction of the works simultaneously with those of the Lancaster and Carlisle Railway for the joint station.

A temporary bridge is now erecting over the River Eden, for the purpose of immediately carrying forward the embankment on the line recently sanctioned by Parliament.

The bridge over the River Esk is in an advanced state, and will be finished this year.

About one half the excavation on this district has been made, and five miles of the road is formed, ready for receiving the permanent way.

In *Dumfriesshire* a large quantity of work has been performed during the last half year. The works in this county are heavy, yet nearly one half the earthwork has been removed; all the bridges over the rivers have been commenced, and some of them are in a considerable state of forwardness; large quantities of materials are on the ground, and upwards of three-fourths of the fencing has been erected.

The permanent way is already laid for short distances at several points, and is now progressing rapidly.

Lanarkshire.—In this county is included the heavy work at the Beattock Summit, and also other considerable excavations; but at every point they are well advanced, and upwards of a third of the whole is completed; at the summit, more than one-half has been removed. The masonary in this district is not so well forwarded as the earthwork; but all the important bridges have been commenced, and the large culverts for carrying the garrion and fidlers burns are completed, and the water diverted through them. About three-fourths of the line is fenced off; short lengths of the permanent way are complete, and permanent materials for a large proportion of the line is already supplied.

LINE TO EDINBURGH.

Rather more than one-third of the whole excavations are made on this line. The earthworks are light, and there will be no difficulty whatever in finishing them within the time assigned. The viaduct over the Linhouse Burn is a work of considerable importance, carrying the railway for 160 yds., at an elevation of 100 ft. above the valley; one abutment and several of the piers are considerably advanced, a large quantity of stone is ready dressed upon the ground, and the necessary machinery erected. The viaduct over the water of Leith is of less importance, being only 40 ft. above the river. This bridge is considerably advanced; two-thirds of the line is fenced off, and the work is in course of construction at all points.

Arrangements for the station at Edinburgh have been made, and plans and designs for the buildings are now preparing.

CASTLECAREY BRANCH.

While your connection with the lines to the north was doubtful, this portion of the work was not pressed forward, as modifications of the original plan might have been required. It will now be carried on as rapidly as possible.

With a view to assist in giving accommodation to the workmen, the gatekeepers' lodges, and platelayers' cottages required for the permanent working of the line will be constructed before the winter commences. Designs for these buildings have been placed in the hands of the contractors.

The total number of men now engaged on the work is 10,500; and 860 horses are also regularly employed. The total quantity of earthwork, exclusive of the Castlecary branch, is 6,200,000 cubic yards, of which upwards of 2,800,000 cubic yards are already completed.

Finally, we may remark that the work has been carried steadily forward with an increasing force, and the number of men now discharged from the Lancaster and Carlisle Railway is already causing a free supply of labour; which, together with the large stock of material disposable from that line by the contractors, will in every way tend to facilitate the operations on the Caledonian Railway—where, at first, the contractors had some difficulty in obtaining a sufficient supply, from the great extent of public works entered upon elsewhere, since the contract for your line was undertaken.

No unforeseen difficulty has arisen in opening out the material, nor have we had to encounter any unexpected engineering contingency in the construction of the works: on the contrary, they have proceeded, without exception, in a satisfactory manner.

(Signed) JOSEPH LOCKE.
Carlisle, August 20, 1846. J. E. ERRINGTON.

GREAT BRITAIN MUTUAL LIFE ASSURANCE SOCIETY, 14, WATERLOO-PLACE, LONDON.

DIRECTORS.

THE CHISHOLM, Chairman | WM. MORLEY, Esq., Deputy-Chairman

HALF CREDIT RATES OF PREMIUM.

The attention of Assurers is particularly directed to the Half Credit Rates of Premium, by which means assurances may be effected, and loans for short periods secured with the least possible present outlay, and at a less premium than for short terms only, and with the option of paying up the arrears and interest—thus becoming entitled to participate in the *whole of the profit of the institution.*

Extract from the Half Credit Rates of Premium.

Age 20.	Age 30.	Age 40.	Age 50.	Age 60.
£0 17 0	£1 1 1	£1 8 2	£2 1 0	£3 4 2

Thus £1000 may be assured at the age of 30 by the annual payment of £10 10s. 10d. for the first five years.

The whole of the profits divided annually among the members, after payment of five annual premiums.

An ample guaranteed capital, in addition to the fund continually accumulating from premiums, *fully sufficient* to afford complete security to the policy-holders.

Members assured to the extent of £1000 entitled (after payment of five annual premiums) to attend and vote at all general meetings, which will have the superintendence and control of the funds and affairs of the society.

Full particulars are detailed in the prospectus, which, with every requisite information, may be obtained by application to A. R. IRVINE, Managing Director.

Birmingham and Midland Bank.—At the annual general meeting of shareholders, a dividend of 25s. per share, for the half-year ending the 30th of June, was declared; the thanks of the meeting were voted to the directors, and to Mr. Geach, the manager; and Messrs. John Taylor and William Scholefield were re-elected directors. The report afforded evidence of the continual prosperity of the bank. In accordance with the expressed intentions of the directors at the last annual meeting, the 400 shares then in reserve had been issued; and from this source, with the transfer of 25,000*l.* from the guarantee fund, the capital has been increased from 50,000*l.* to 90,000*l.* The statement of accounts to the 30th of June last showed, after paying the past year's income tax, and abundantly providing for every doubtful debt, a clear net profit of 12,831*l.* 15s. 11d. leaving a balance to be carried to the guarantee fund of 6938*l.* 0s. 11d. The directors repeated that they saw no reason to doubt, that in a very short time a further transfer may be made from the guarantee fund, so as to make up the full capital of 120,000*l.*; and they recommended that the consideration of an increased dividend be deferred until this operation has been effected. The report was received and adopted.

The Rajah of Travancore and Holloway's Ointment.—On the 11th of July, 1846, Professor Holloway was honoured with an order for six of the largest pots of Holloway's Ointment from no less a personage than His Royal Highness the Rajah, or reigning sovereign, of Travancore, through the eminent house of Messrs. J. Cockburn and Co., East India merchants, No. 11, New Broad-street, London. The ointment, it appears, is for the personal use of the Rajah, and will be employed under the superintendence of his private physician. Holloway's ointment is sold all over India, being a certain cure for ulcers, wounds, sores, and abscesses, even if of 20 years' standing, and may be obtained of the proprietor, 244, Strand, London, and of every medicine vendor.

Imports and Exports of British and Foreign Iron.—We have received the usual Parliamentary returns of the quantity of foreign iron imported and exported from the United Kingdom in the year 1845, distinguishing the several sorts of iron, and the countries from which imported, and to which exported; British iron exported, including unwrought steel; also British hardware and machinery exported in the year 1845. From these several documents, it appears, that there had been of chromate of iron imported, 2673 tons, of which was re-exported 14½ tons; of pig-iron, 220¾ tons, re-exported none; bar-iron, 33,402½ tons: re-exported 2562½ tons; old broken and cast, 391 tons; cast-iron, 140¾ tons of steel, unwrought, there had been imported 2102 tons, and re-exported, 1808¾ tons; and of iron and steel, wrought, entered by weight, 109 tons—all re-exported; by value, 21,197*l.*; re-exported, 7431*l.* The net amount of duty received within the year was 2181*l.* The quantity of British iron exported was as follows:—pig, 77,362 tons; bar, 153,813 tons; bolt or rod, 10,210 tons; cast, 22,036 tons; wire, 1949 tons; anchors, grapnels, &c., 2975 tons; hoops, 11,389 tons; nails, 6464 tons; all other sorts, except ordnance, 56,165 tons; old iron for remanufacture, 2251 tons; and unwrought steel, 7015 tons. Of these quantities, Russia took of pig, 2923 tons; bar, 14,884 tons; cast, 598 tons; wire, 210 tons; of other sorts, 1278 tons. Denmark—of pig, 2739 tons; bar, 3810 tons; bolt, 220 tons; cast, 109 tons; hoops, 396 tons; other sorts, 3424 tons. Prussia—pig, 370 tons; bar, 27,082 tons; cast, 69 tons; other sorts, 1718 tons. Germany—pig, 3363 tons; bar, 27,056 tons; bolt, 1624 tons; cast, 6313 tons; hoops, 1218 tons; other sorts, 15,464 tons. Holland—pig, 5955 tons; bar, 6497 tons; bolt, 499 tons; cast, 896 tons; other sorts, 6767 tons. France—pig, 21,198 tons; bar, 2796 tons; bolt, 187 tons; cast, 218 tons; other sorts, 1480 tons. Italy—pig, 3789 tons; bar, 10,677 tons; bolt, 1386 tons; cast, 2471 tons; hoops, 1268 tons; other sorts, 2223 tons. Turkey—pig, 714 tons; bar, 3665 tons; bolt, 1927 tons; cast, 73 tons; other sorts, 1956 tons. British territories in the East Indies—pig, 1121 tons; bar, 6728 tons; bolt, 572 tons; cast, 943 tons; wire, 205 tons; anchors and grapnels, 768 tons; hoops, 680 tons; nails, 259 tons; other sorts, except ordnance, 3247 tons. British Australia and New Zealand—pig, 225 tons; bar, 983 tons; cast, 284 tons; hoops, 779 tons; nails, 436 tons; other sorts, 831 tons. British North America—pig, 6388 tons; bar, 11,297 tons; bolts, 97 tons; cast, 2384 tons; hoops, 1484 tons; nails, 1790 tons; all others, 6806 tons. United States—pig, 23,375 tons; bar, 25,006 tons; bolt, 1292 tons; cast, 544 tons; hoops, 306 tons; nails, 346 tons; other sorts, 5458 tons. Of unwrought steel Russia took 959 tons; Prussia, 134 tons; Germany, 565 tons; Holland, 461 tons; Belgium, 387 tons; France, 119 tons; Italy, 137 tons; East Indies, 84 tons; North American Colonies, 343 tons; and United States, 3633 tons. The remainder of the several kinds above stated were shipped for other minor States of Europe, and the islands of the Mediterranean, Indian seas, Pacific Ocean, &c. British hardware and cutlery were exported to the amount of 2,183,000*l.*—of which Russia took to the value of 53,172*l.*; Norway, 11,909*l.*; Prussia, 10,053*l.*; Germany, 159,459*l.*; Holland, 57,998*l.*; Belgium, 51,148*l.*; France, 114,140*l.*; Portugal, Azores, and Madeira, 21,754*l.*; Spain and Canaries, 34,205*l.*; Gibraltar, 22,812*l.*; Italy, 43,271*l.*; Turkey, 21,165*l.*; Africa, 24,380*l.*; Cape of Good Hope, 23,970*l.*; Mauritius, 12,146*l.*; East Indies, 119,896*l.*; Sumatra, Java, &c. &c., 13,040*l.*; China, 20,668*l.*; Australia and New Zealand, 37,493*l.*; British North America, 200,475*l.*; British West Indies, 80,483*l.*; foreign ditto, 72,540*l.*; United States of America, 719,324*l.*; Mexico, 15,862*l.*; New Granada, Venezuela, and Ecuador, 21,258*l.*; the Brasils, 75,998*l.*; Rio de la Plata, 25,236*l.*; Chili, 33,482*l.*; Peru, 35,659*l.*; Channel Island, 17,439*l.* The total amount of British machinery and millwork exported during the year was 904,961*l.*—of which Russia took to the amount of 116,084; Prussia, 10,629*l.*; Germany, 113,847*l.*; Holland, 50,014*l.*; Belgium, 36,635*l.*; Italy, 60,834*l.*; France, 103,048*l.*; Spain and Canaries, 65,387*l.*; Egypt, 13,956*l.*; Mauritius, 39,600*l.*; British East Indies, 91,838*l.*; British West Indies, 46,286*l.*; United States, 44,611*l.*; and Brazils, 16,685*l.*

Greenhow's Geometrical Railway.—We went at some length in last week's Number into the arguments in a pamphlet, entitled "*Round Rail v. T Rail*," by Geometricus; and having gone through his remarks on the circular rail, concave tire, and inclined spoke, we now come to his observations on the suspension of the carriages: he considers no part of the system has been less understood by careless observers than the practical result of this arrangement; and he then proceeds to make it clearly understood by all who will give it a slight degree of attention only—and predicts that few who examine the subject, with a desire to comprehend it, will fail to perceive and acknowledge the great security which it insures to the train under many circumstances, which would otherwise threaten its overthrow. He says—"The suspension of the carriage on pivots at each end, turns it into a lever, with arms of equal length, and we must assume of equal weight; elevate or depress either of the arms, and it will immediately return to the horizontal line with a degree of force proportionate to the weight of the carriage, and the extent to which its equilibrium has been deranged; and with a force of like power it will act upon any body that may interrupt its course. Now, one or other extremity of this powerful lever is checked under the circumstances supposed by the chains, which connect it with the frame work, upon which it is supported; and with a force compounded of the weight of the carriage, and the impulse of reaction it will drag down that side of the entire mass, which by any accidental circumstances may be raised from the horizontal level. But in performing this good service, it is but the first part of a compound or double leverage; the second portion of which is the action of the wheels, and the entire action is concentrated on the tire of the opposite wheel—the round rail being the fulcrum of the whole. In this piece of mechanism the arrangement and properties of the animal machine have been closely and successfully imitated. The wheels and connected framework represent the lower limbs and part of the trunk; the *standard*, or upright, performs the duties of the spine; the head and upper part of the trunk are represented by the carriage—the lower angles of which, with the chains, supply the place of arms, ever watchful and ready to make movements exactly at the times, and in the directions necessary to preserve its equilibrium, and give stability to the whole, with whatever velocity it may pass along the line, or with whatever impediments it may meet in its way. So accurate and beautiful is the balance of forces, and so admirably is every dangerous contingency guarded against in this method of supporting the carriages, that I am convinced neither the theorist, or the practical mechanic, can make himself acquainted with it, without awarding to it his entire approbation; and so well does it harmonise with the qualities of the round rail, and the inclined spoke, as to render the whole arrangement in a high degree symmetrical and complete." The author next notices the plan of ascending steeper gradients than have hitherto been practicable by short levers, and rests somewhat like the numerous legs of the *centipede*. This we shall pass over as not particularly connected with the most important features of the system, but proceed to his remarks on the valuable feature therein, the method by which one pair of wheels of the engine and of each carriage are made to turn in such manner as to adapt themselves to very sharp curves with perfect ease and safety. He says—"The axle of the wheels plays in bearings, which are permitted to move in certain limits, but always perpendicular to the framework which supports the carriage, and are guided by a strong circular rod passing through certain openings, which at once permit and limit the movements of the wheels within the necessary range; this, in practice, must not only give safety to curves, otherwise impassable without danger, but will greatly facilitate and economise the passage from one line to another, when they meet at an acute angle; and may be the means of saving altogether the cost of the expensive turn tables now used in the stations for passing the trains round from one side to the other." He then proceeds to some general remarks, relative to questions of economy, in connection with the Geometrical System, as, on the substitution of cast for wrought iron in the construction of the rails, the cylindrical form adding greatly to their strength, and the absence of angles protecting them from the sudden jarrings to which rails of the T form are exposed, the general wear and tear lessened, and much workmanship and labour saved. With respect to maintaining the gauge, he shows that, with respect to the T rail, with a conical flange on the wheel, the latter possesses the qualities of a wedge between the rails; the unceasing action of which is to push them further and further apart with a force proportionate to the weight which they support—while the concave wheel completely obviates this objection; and, with respect to the breaking the connection between lines of T and O rails, the concave tire would, in point of fact, travel more safely on a T rail than any wheel at present in use, and will pass indifferently from one to the other; it has a deeper flange, will adapt itself to an increased distance from the rails, and will permit a *second movement* of the wheel upon the rail to take place without danger of passing from the line, and in describing curves will present a broad diameter to the outer, and a narrow diameter to the inner rail; and here are the means of obviating all the objections, having the slightest pretensions to validity, which have been brought against it, and which, positively, add to the safety and convenience of the T rail, unphilosophical as it is in theory, and dangerous as it so frequently proves in practice. We subjoin the following concluding remarks:—"With respect to increased honour and reputation to the engineer, it is a matter which concerns *him* nearly. Let him weigh it well, especially before he determines to oppose the introduction of the *round rail*; for he may rest assured that, as certainly as the *sun* itself is *round*, before many years are past, *round* is the only form of *rail* that *will* or can prevail throughout Great Britain and the world; and for a like reason, because it is the *only figure* by which can be preserved unbroken those relations with the other parts of the great machine with which it is connected, whereby the regularity of their action and reaction upon each other is maintained in its integrity and perfection."

GEOLOGICAL SURVEY OF CANADA.

Subjoined we give Mr. Logan's narrative of the operations in Gaspé and the neighbourhood. The whole report is too lengthy for us to republish, and we must content ourselves with giving the results arrived at.

After a patient and thorough examination of the strata of this district, the provincial geologist found no beds of coal, although a seam of half an inch thickness was discovered. It is the opinion of Mr. Logan, that the narrow margin of the north shore of the Bay of Chaleurs is the limit in that direction of the great eastern coal field of North America.

Bituminous shales, some of which yield a bright flame on being burned, are abundant; and these have led to the erroneous belief, that coal was in the vicinity. Bituminous limestones were also found.

Blood red and other coloured jaspers, in masses of some pounds weight, were found in considerable quantities, and also a variety of beautiful agates.

Two petroleum or naptha springs were examined; one is situated on the south side of the St. John River, one mile and a half above Douglas Town, and issues through a substratum of clay, and a superstratum of vegetable remains, and becomes apparent among the mud and shingle of the beach, and appears to be connected with a bituminous deposit of a solid nature found in small nodules embedded in the rock, at the distance of about 20 miles. Pits being dug in the beach, the naptha collects upon the surface of the water. The quantity, however, is not considerable, from 12 pits only half a pint was obtained with difficulty, in four hours. It is not said, whether any means might not be taken—such as the sinking of the pits to a greater depth—to increase the product to such a degree as to make it of commercial advantage.

The second spring is situated about 200 yards up a small fork of the Silver Brook, a tributary of the South West Arm falling into it six or seven miles above Gaspé basin. Two sulphur springs, of the same character as those which exist in many parts of the province, were also noticed.

Many fossils were discovered; and among them, one supposed to be new, of the order *Brontes*, to which it is proposed to apply the term *Canadensis*.

Two veins of galena were discovered; the one is situated in Little Gaspé Cove, and measures in the thickest part one inch in width, but gradually terminates both ways in a few yards, from a fault; the other is in the Indian Cove, close to the fishing stage of Messrs. Pierre and Antonie Simon, consisting of a lode 12 yards wide, in which the principal vein measures two inches in width. Upon assay the galena crystals were found to consist of more antimony than lead, existing in combination with sulphur. It is not probable that either of these veins are worth the working.

Argillaceous iron ore distributed through a rock of very hard structure exists in a greater or less degree over the whole district, but in no locality was it found in sufficiently large quantities for mining purposes. Upon assay the ore yielded 26 per cent. of pure iron. There was also found, upon lot 37, in New Carlisle, belonging to a Mr. Thompson, a small vein of micaceous iron ore, coming up to the surface, so that the plough turned up lumps of it. The extent or capability of this vein was not investigated. This is the sum of the discoveries made; and it must be admitted, that they are of a negative character. The question of the immense mineral resources of Gaspé is, however, set at rest for ever, by the establishment of the fact, that such do not exist; and the Legislature will be saved the trouble of incorporating any more mining companies in that direction.

We trust that Mr. Logan's next tour will be through the copper region of Lake Superior; his observations on that locality will be of great service to the country.—*Montreal Courier.*

Current Prices of Stocks, Shares, & Metals.

STOCK EXCHANGE, Saturday morning, Twelve o'clock.

Bank Stock, 7 per Cent., 209
3 per Cent. Reduced Ann., 96⅞ ¼
3 per Cent. Consols Ann., 96⅛ 6
3 per Cent. Annuities, —
3½ per Cent. Ann., 98¼ ¼
Long Annuities, 10 7-16 ⅜
India Stock, 10¼ per Cent., —
3 per Cent. Consols for Acc., —
Exchequer Bills, 1000*l.*, 20 16 20 pm.

Belgian Bonds, 4½ per Cent., 97½
Dutch, 2½ per Cent., 59⅝
Brazilian, 5 per Cents., 69½
Chilian, 6 per Cents., —
Mexican, 5 per Cents., 24½
Spanish, 5 per Cents., 25½
Ditto Deferred, —
Portuguese, 5 per Cents., 85
Russian, 5 per Cents., 113½

Mines.—The mining share market has but little improved on last week's statements, although there is a manifest cause for believing that some decided and permanent improvement is not far off. Mining men are feeling the advantages of their speculations, and casual speculators, who have advisedly invested, are reaping an excellent return for their capital. Several mines have declared dividends this week—East Wheal Rose to the amount of 50*l.* per 128th share, reserving a balance of upwards of 5000*l.* The shares which have changed hands this week have been in the following mines:—Wheal Trelawney, Trehane, East Wheal Tamar, Wheal Mary Consols, Holmbush, West Trethellan, Treleigh, West Wheal Jewel, South Bassett, South Francis, Devon and Courtney, Concord, Wheal Walter, Kircudbrightshire. In foreign mines—Alten, Copiapo, and Bolanos.

Railways.—The business in the share market, at the close of last week, a little more brisk, sunk again towards the middle of the week to the most insignificant extent. Plenty of every kind of stock in the market, but buyers exceedingly shy; there has been no reaction worthy of note up to yesterday.

Meetings.—Birmingham, Lichfield, and Manchester: first meeting—it is proposed to sell this line to the London and North-Western, who are to give a bonus of 2*l.* per share, and be bound to carry out the provisions of the Act.—Blackburn, Darwen, and Bolton: half-yearly meeting—it appeared, that satisfactory progress had been made in the works, particularly the heavy portion of the line; the tunnel will be finished in the autumn of the next year.—Blackburn, Clitheroe, and North-Western Junction: first meeting—report presented of details of proceedings, and power taken to allow interest on paid-up capital, and calls paid in advance.—Newry, Warrenpoint, and Rosstrevor: first meeting—the report stated this would prove the best line yet projected in Ireland; it went into the usual details. The chairman stated, that it was advisable to construct the line as soon as possible; but the calls would not exceed 3*l.* per share each.—North Wales Mineral: half-yearly meeting—the line from the Chester and Holyhead line to Ruabon, will be opened in October next. The directors had borrowed 50,000*l.*, as authorised by the Act; the total receipts were 232,393*l.* 15s. 2d.; arrears of calls, 26,668*l.*; and balance at bankers, 9895*l.* 1s. 10d.—Durham and Sunderland: unanimously agreed to sell the line to the York and Newcastle Company; the purchase money is 5540 shares, at 30*l.* each; and liabilities, 120,000*l.*—the latter company have agreed to the terms.—Maryport and Carlisle: annual meeting—there had been an increase on the coal traffic of 16 per cent., and passenger, 34 per cent.; the receipts were 64,244*l.*; and the disbursements, 35,021*l.*—Great Northern London and York Railway: a meeting took place at Doncaster, for sending a memorial, showing that that town was most beneficially situated for a *depôt* for this railway.—The Furness Railway Company; Wilts, Somerset, and Weymouth; and Dublin and Belfast Junction and Havan Branch Extension: each had their half-yearly meeting, to report the progress of the works.—Guildford, Portsmouth, and Fareham, and the South Wales: also for the same purpose.—Taff Vale: half-yearly meeting; a dividend of 3*l.* 3s. was declared.—Meetings have also been been held of the Middlesborough and Redcar; Wear Valley; Lynn and Dereham; Lynn and Ely; Ely and Huntingdon; Whitehaven and Furness; South Yorkshire; Leeds and Bradford; Waterford, Wexford, and Dublin; Dundalk and Enniskillen; Dublin, Dundrum, and Rathfarnham, and the Londonderry and Enniskillen.

In the House of Lords, the Manchester and Southampton Railway Bill was declared not proved; seven railway bills received the Royal Assent, and the Railway Commission Bill was read a third time, and passed.

Hull, Thursday.—The share market, during the past week, has presented no feature worthy of particular comment. There is a strong disposition to invest in lines approaching completion; and such stocks are at present more in request than scrip lines that have just received the sanction of the Legislature: the report of the Malton and Driffield is calculated to inspire its proprietors with confidence. Parties holding scrip cannot be too careful how they give credence to advertisements announcing *arrangements*. Two spurious ones have appeared this week relating to the West Riding Unions and the Northern Counties Union. A collective fund, raised by the various Stock Exchanges, for the purpose of offering rewards for the detection of the offenders, would, perhaps, prevent the recurrence of such decoy statements.

THAMES TUNNEL COMPANY.

The number of passengers who passed through the Tunnel in the week ending August 22, was 18,329; amount of money, £76 7s. 5d.

Tolls for the week ending Aug. 15, £73 19s. 2d.—Passengers, 17,730.

Exportation of the Precious Metals.—The following are the official returns of the exports of gold and silver from the port of London for the last week:—

Silver coin to Rotterdam	50,000	ounces.
Silver bars to ditto	39,000	„
Gold coin to Oporto	315	„

RAILWAY SHARE LIST.

RAILWAYS.	Paid	Closing pr. last week.	Closing pr. last night.
Aberdeen	£10	8½	9½
Amber, Nottingham, Boston, and Erewash Junction	24	1½	2
Armagh, Coleraine, and Portrush—25*l.* shares	12	—	—
Birmingham and Gloucester—100*l.* shares	100	127½	128
Birmingham and Oxford Junction—20*l.* shares	3	3	3½
Bristol and Exeter—100*l.* shares	70	87	86
Bristol and Gloucester—50*l.* per shares	30	50*	51
Caledonian—80*l.* per share	8	15½	16½
Chester and Holyhead—50*l.* shares	27½	26½	26½
Direct Northern—50*l.* shares	2½	1½	1½
Direct Manchester (Remington's)—20*l.* shares	2½	—	—
Ditto Bastrick's	5½	—	—
Dublin and Galway—50*l.* shares	4	1½	1½
Dundalk and Enniskillen—50*l.* shares	7½	—	—
Eastern Counties—25*l.* shares	14 16s	22½	23
East Lincolnshire	14	—	—
Edinburgh and Glasgow—50*l.* shares	50	69	73½
Edinburgh and Northern	10	10	10
Edinburgh and Perth	8	3	3½
Exeter, Yeovil, and Dorchester—50*l.* shares	2½	—	—
Goole and Doncaster—20*l.* shares	42s	½ dis.	½ dis.
Grand Union (Nottingham and Lynn)	1½	¼	¼
Great Southern and Western (Ireland)—50*l.* shares	15	28½	28½
Great North of England—100*l.* shares	100	230	238
Great Western—100*l.* shares	80	149	148
Guildford, Farnham, and Portsmouth—50*l.* shares	5	5½	—
Hull and Selby—50*l.* shares	50	104	104
Lancaster and Carlisle—50*l.* shares	25	—	54½
Leeds and Bradford	26	68½	69
Leeds and Carlisle	2½	14½	—
Leicester and Birmingham—20*l.* shares	22s	½ dis.	½ dis.
Leicester and Bedford—20*l.* shares	22s	½ dis.	½ dis.
Leicester and Tamworth—20*l.* shares	42s	½ dis.	½ dis.
Liverpool, Manchester, and Newcastle Junction	12	24	24
London and North Western	stock.	207	207
London and Blackwall	Av. 16*l.* 13s 4*d*	8½	8
London and Brighton—50*l.* shares	50	63	62½
London and Croydon	Av. 13*l.* 15s 9*d*	23½	23½
London and Greenwich	Av. 12*l.* 15s 4*d*	9	—
London and South Western	Av. 41*l.* 6s 10*d*	75½	74½
London and York—50*l.* shares	2½	2	2½
London, Salisbury, and Yeovil—50*l.* shares	2½	1½	2
Londonderry and Coleraine—50*l.* shares	2½	6	5½
Lynn and Ely—25*l.* shares	15	16	12½
Lynn and Dereham—25*l.* shares	15	12½	—
Manchester and Leeds—100*l.* shares	82	117	114½
Manchester and Birmingham—40*l.* shares	40	78	78
Manchester, Buxton, and Matlock—20*l.* shares	42s	½ pm.	½ pm.
Manchester and Southampton	2	1½	1½
Midland	Stock	143½	139
Ditto Birmingham and Derby	Stock	115	130
Newcastle and Berwick—25*l.* shares	10	27½	28½
Newcastle and Carlisle—100*l.* shares	100	—	—
Newcastle and Darlington Junction—25*l.* shares	25	42½	43½
Ditto New (Brandling)—25*l.* shares	20	—	—
Newark, Sheffield, and Boston—25*l.* shares	2½	½	—
Norfolk	20	26½	27
North British—25*l.* shares	17½	38½	39½
Northern and Eastern—50*l.* shares	45	—	—
North Kent and Direct Dover—50*l.* shares	2½	1½	1½
North Staffordshire—20*l.* shares	42s	¾ pm.	¾ pm.
Oxford, Worcester, and Wolverhampton	12½	8	8½
Portsmouth Direct—50*l.* shares	5½	5½	5½
Preston and Wyre—50*l.* shares	50	34½	—
Richmond—20*l.* shares	5	18½	19½
Scottish Central—25*l.* shares	7½	19½	19½
Scottish Midland—25*l.* shares	10	—	—
Sheffield and Manchester—100*l.* shares	100	—	—
Shrewsbury and Birmingham	2½	3	3½
South Devon—50*l.* shares	25	32	33½
South Eastern and Dover	Av. 33*l.* 2s 4*d*	42½	44½
South Midland—20*l.* shares	42s	¼ pm.	¼ pm.
South Wales—50*l.* shares	5	4	4½
Vale of Neath	2	1½	1
Waterford and Kilkenny	8	2½	—
Welsh Midland	2½	½	—
West Riding Union	42	2½ pm.	¾ pm.
Wilts, Somerset, and Weymouth—50*l.* shares	10	5½	5
York and Carlisle	2½	¼	¼
York and North Midland—50*l.* shares	50	97	97
Ditto Selby—50*l.* shares	30	78½	—
FOREIGN RAILWAYS.			
Boulogne and Amiens—20*l.* shares	10	12½	12½
Bordeaux and Toulouse and Cette (Mackenzie)—20*l.* shares	2	1½	1½
Bordeaux, Toulouse, and Cette (Espaleto)—20*l.* shares	2	1½	1½
Central of Spain—20*l.* shares	2	—	—
Dutch Rhenish—20*l.* shares	5	6½	6
East Indian	4	¼	¼
Great Northern of France (constituted)	5	12½	13½
Great Western Bengal	3	¼	¼
Jamaica and South Midland Junction—20*l.* shares	1	—	—
Louvaine and Jemappe—20*l.* shares	4	—	—
Lyons and Avignon—20*l.* shares	2	—	—
Luxembourg	4	1½	1½
Namur and Liege—20*l.* shares	4	2½	2½
Orleans and Vierzon—20*l.* shares	10	14½	—
Orleans and Bordeaux—20*l.* shares	6	8	8½
Paris and St. Quentin—20*l.* per share	2	—	—
Paris and Orleans—20*l.* shares	20	—	—
Paris and Rouen—20*l.* shares	20	—	31½
Rouen and Havre—20*l.* shares	18	27	27½
Sambre and Meuse—20*l.* shares	6	4½	4½
Strasburg and Basle—14*l.* shares	14	—	—
West Flanders	4	4½	4½

* Prices obtained from country brokers—no business doing in the London market.

RAILWAY TRAFFIC RETURNS.

Name of Railway.	Lgth. Rway.	Present actual cost.	Last Div.	*Traffic Returns.* 1846	1845
Arbroath and Forfar	15	£142,900	3*p.c.*	—	£ 222
Chester and Birkenhead	15	589,362	2½	715 8 11	770
Dublin and Drogheda	32	631,258	3½	975 0 3	1006
Dublin and Kingstown	6	349,736	9	1440 16 4	1224
Dundee and Arbroath	17	153,598	6	339 8 9	345
Durham and Sunderland	79	362,118	2	541 19 0	467
E. Counties & North. & East	124½	4,090,328	5	8826 14 3	8789
Eastern Union	—	—	—	478 16 7	—
Edinburgh and Glasgow	46	1,686,226	6	4373 0 1	3098
Glasgow, Paisley, and Ayr	51	1,104,773	7	2828 6 0	2471
Glasgow, Paisley, & Greenock	23	806,134	2	1704 13 4	1630
Gravesend and Rochester	7	82,826	—	304 10 10	313
Great North of England	45	1,296,196	6	—	—
Great Western	245½	8,179,966	8	19873 6 5	16806
Hartlepool	—	—	—	954 11 10	1151
London and North Western	440½	15,047,301	10	47656 19 5	—
London and Blackwall	4	1,078,761	1½	1382 17 8	1392
London & Brighton & South Coast	113	3,496,265	5	9896 5 10	6463
London and South-Western	100	2,620,724	10½	7809 11 8½	8523
Manchester and Birmingham	85	2,197,585	6½	—	5464
Manchester & Leeds	61	3,372,240	8	7974 0 7	7777
Manchester, Bolton, & Bury	10	842,725	5½	1269 15 11	980
Midland Company	259½	8,831,196	7	20941 19 3	17944
Newcastle and Carlisle	65	1,137,385	8	2397 6 10	1816
Newcastle and Darlington	22½	1,272,031	9	3230 10 5	2855
Newcastle and North Shields	7	316,869	5	—	516
Norfolk	59	573,816	5	1719 10 1	—
North British	58½	—	—	2289 0 0	—
Preston and Wyre	22	432,014	9½	1320 14 0	1212
Sheffield and Manchester	41½	1,313,225	3	2434 5 11	1641
South Devon	15	520,942	—	641 7 8	—
South-Eastern and Dover	137½	4,284,924	3½	10544 13 2	8823
Taff Vale	30	648,348	6	1350 15 8	1200
Ulster	25	358,353	5½	636 2 0	664
York and North Midland	84	2,334,599	10	8351 10 9	6656
Northern of France	260	—	4	7324 0 0	—
Orleans and Bordeaux	72	599,040	4	3153 0 0	—
Paris and Orleans	82	2,062,916	9½	8612 0 0	7324
Paris and Rouen	85	1,995,206	8	8084 0 0	7210

COAL MARKET, LONDON.

PRICE OF COALS PER TON AT THE CLOSE OF THE MARKET.

MONDAY.—Adair's 13 6—Chilton Hartley 14—Chester Main 14—Hasting's Hartley 16—Holywell 15—Newcastle Hartley 13—Original Tanfield 13—Ord's Redheugh 13—Ravensworth's West Hartley 15 6—Tanfield Moor 15—Townley 14.—Ships at market, 142.

WEDNESDAY.—Adair's Main 13—Carr's Hartley 16—Chester Main 14—Dean's Primrose 13—Ellison Low Main 13—Hasting's Hartley 16—Holywell Main 15—New Tanfield 12 6—Newcastle Hartley 13—Original Tanfield 12 6—Ord's Redheugh 13—Shaftoe's Hartley 14 6—Stewart's Hartley 14 6—Tanfield Moor 15—West Hartley 16—West Wylam 14 3—West Pelaw 12 6—Wylam 14 6—Eden Main 14 9—Cowpen Hartley 16—Sidney's Hartley 16—Wall's End Bewicke and Co. 14 6—Gosforth 14 6—Hotspur 14 6—Killingworth 14 3—Riddell's 14 6—Walker 14 6—Braddyll's Hetton 15 9—East Hetton 14 9—Hetton 15 9—Kupier 15—Lambton 15 6—Russell's Hetton 15 6—Shotton 15 3—Stewar's 15 9—Harvey 14 6—Hartlepool 15 9—Kelloe 15 9—Ludworth 15 9—Thornley 14 9—Cowndon Tees 14 6—Seymour Tees 14 6—South Durham 14 6—Tees 15 6—West Cornforth 14 6—West Tees 14 3.—Ships at market, 100; sold, 74; unsold, 26.

FRIDAY.—Adair's Main 13 6—Braddle's West Hartley 16—Carr's Hartley 16—Hartley 16—Davison's West Hartley 16—Ellison Low Main 13—Hastings Hartley 16—Holywell Main 15—New Tanfield 12 6—Original Tanfield 12 6—Ord's Redheugh 13—Shaftoe's Hartley 14 6—Stewart's Hartley 14 6—Tanfield Moor 15—West Hartley 16—Wall's End Hotspur 14 9—Killingworth 14 6—Walker 15—Eden Main 15 3—Braddyll's Hetton 16 to 16 3—East Hetton 15—Hetton 16 3—Lambton 16—Russell's Hetton 15 9—Shotton 15 6 Stewart's 16—South Kelloe 16—Adelaide Tees 15 9—Barrett 15—Tees 16—Cowpen Hartley 16—Derwentwater Hartly 15 6—Sidney's Hartley 16.—Ships at market, 60.

PRICES OF MINING SHARES.

BRITISH MINES.

Shares.	Company.	Paid.	Price.
1024	Alfred Consols	3½	35
235	Andrew and Nangiles	25½	25
1000	Barristown	4½	30
4000	Bedford	2½	2
128	Besore Lead Mine	—	20
320	Birch Tor Tin Mine	10½	12
8000	Blaenavon	50	40
256	Bodwannick	3	3
100	Botallack	175	275
120	Brewer	—	5
10000	British Iron, New, regis.	10	19
—	Ditto ditto, scrip	10	19
128	Budnick Consols	—	30
100	Bwich Cwmerfin	20	200
1000	Callington	19	18
256	Caradon Consols	45	35
256	Caradon Copper Mine	9½	1
256	Caradon Mines	15	28
256	Caradon United	24	32
256	Caradon Wh. Hooper	12	4
1000	Carn Brea	15	100
114	Charlestown	—	200
166	Cleveland	7½	7½
1900	Combmartin	5½	4½
1000	Comblawn	2½	5
128	Comfort	—	40
5000	Con. Tretoil Mining Ass.	3½	1½
128	Condurrow	36	56
2560	Cook's Kitchen	—	4
1000	Copper Bottom	1	5
1024	Cosheen	4½	30
240	Craddock Moor	9	20
128	Creeg Braws	120	120
500	Cubert Mine	11	30
7100	Derwent	8½	5
1024	Devon & Courtney Con.	4	5½
1000	Dhurode	2	5
188	Dolcoath	—	80
10000	Durham County Coal	45	9
256	East Alvenney	3	16
128	East Pool	5	35
9000	East Tamar Consols	1½	3½
—	East Wheal Albert	1	3
24	East Wheal Crofty	—	300
256	East Wheal Kitty	½	½
128	East Wheal Rose	50	150
123	East Wheal Seton	2½	12
512	Fowey Consols	—	40
20000	Galvanised Iron Co.	10	10
10000	Gen. Mining Co. for Irel.	½	½
1000	Godolphin	—	35
256	Gonamena	19	90
128	Gover	23	200
244	Grambler & St. Aubyn	—	25
100	Great Consols	1000	400
256	Great Calestick Moors	6½	13
2560	Great Mitchel Consols	—	2
256	Great Resugga Moor	1	8
512	Gt. Wh. Rough Tor Con.	1	—
100	Grogwinion	5	20
1000	Gunnis Lake	1½	3
1000	Hanson	5	1
1000	Harrowbarrow Old Mine	4½	3½
1000	Harrowbarrow Consols	2	1½
800	Hawkmoor	3	4
6000	Heigniston Down Con.	1	2
256	Herodsfoot	14	11
10000	Hibernian	12½	1
—	Hobb's Hill	—	8
1060	Holmbush	18	8½
256	Ivy Tor	1½	2½
827	Kirkcudbrightshire	1½	2½
2048	Lamherooe Wh. Maria	7	7½
128	Lanarth & Penstruthal	—	150
2048	Lanivet Consols	2	4½
200	Larkholes	1	3
100	Levant	—	90
1000	Lewis	12	1½
1280	Llancynfelin	5	15
128	Ludcott	3	3
2800	Marke Valley	10	3½
5000	Mendip Hills	1½	½
20000	Mining Co. of Ireland	7	12
200	Nanterrow Consols	10½	5
128	New East Crowndale	7½	2
128	North Fowey Consols	10	25
100	North Pool	11	45
70	North Roskear	10½	400
256	North Treburget	2½	4
100	North United	41	20
256	North Wh. Leisure	1½	6
128	North Wh. Providence	2½	10
256	North Wheal Rose	26½	15
15000	Northern Coal Co.	23	2
600	Old Delabole Slate Co.	25	45
128	Par Consols	—	900
256	Penhallow Moor	15	5
6000	Pennant	1	2
100	Penrhiw	30	65
128	Pen-y-Cefn Mine	50	65
1280	Perran St. George Un.	13	20
128	Perran Wh. Virgin	—	45
512	Plymouth Wh. Yeoland	1½	3½
2048	Prince Edward	1½	1½
10000	Rhymney Iron	50	25
256	Rose Consols	10	7
1000	Rosewall Hill	1	3½
2500	Silver Valley	3	2½
256	Sourton Consols	3½	5
128	South Caradon	10	375
2000	South Dolcoath	2	—
256	Sth. Friendsh. Wh. Ann	7½	—
260	South St. George	9½	1
800	South Harvannah	23	26
800	South Towan	10	1½
256	South Trelawney	12½	5
128	South Yeoland	16½	20
128	South Wheal Basset	—	145
124	South Wh. Francis	—	90

BRITISH MINES—*continued.*

Shares.	Company.	Paid.	Price.
256	South Wh. Hope	—	5
1000	South Wh. Maria	2½	4½
256	South Wheal Rose	11½	3
10000	Southern & Western, Irish	1	2
256	St. Austell Consols	7	20
94	St. Ives Consols	—	600
1000	Stray Park	43	92
9600	Tamar Consols	3	4
6000	Tincroft	7	9
256	Ting Tang	67	10
128	Tokenbury	124	25
256	Trehane	—	18
1024	Trelawney Consols	1½	1½
5000	Treleigh Consols	6	4½
256	Trenow Consols	—	150
96	Tresavean	10	250
120	Trethellan	5	35
120	Treviskey and Barrier	61	140
256	Trewallack	—	25
128	Trewellard	12	25½
4000	United Hills	5	2
100	United Mines	300	800
128	West Basset	45	15
256	West Caradon	20	280
128	West Cargoll	2	13
512	West Fowey Consols	40	35
—	West Kekewich Consols	—	3½
256	Wheal Kekewich	4	8
256	West Providence	—	10
200	West Seton	—	46
120	West Trethellan	5	35
256	West United Hills	2½	3½
256	West Wh. Friendship	5	10
3845	West Wheal Jewel	11	2
2560	West Wh. Maria	½	2½
2560	West Wh. Mitchell	—	2
256	West Wheal Shepherd	—	10
256	West Wheal Tolgus	2½	14
256	West Wheal Treasury	12	8
240	Westerlake	3	3
6000	Wicklow Copper	5	16½
—	Wheal Agar	—	50
256	Wheal Albert	10	8
128	Wheal Acland	13	2
256	Wheal Allen	½	4
368	Wheal Anderton	10½	11½
128	Wheal Ann	—	50
256	Wheal Blencowe	—	15
256	Wheal Blan Consols	½	3
128	Wheal Catherine	5½	½
256	Wheal Cleveland	2½	5
136	Wheal Clifford	—	200
1024	Wheal Concord	5½	6
256	Wheal Fortescue	4½	10
256	Wheal Frederick	3	—
384	Wheal Franco	22	25
256	Wheal Gill	17½	26
1000	Wheal Harriet	1	—
128	Wheal Henry	—	5
2048	Wheal Holwell	1½	1½
109	Wheal Hope (Zennor)	23	25
256	Wheal Hope	7	1½
256	Wheal Jane	6	40
265	Wheal Kendall	11½	5
256	Wheal Louisa	4½	5
1024	Wheal Maria	1	500
4000	Wheal Martha Consols	4	5
256	Wheal Mary Ann	5	50
1024	Wheal Mary (Calstock)	2½	1½
256	Wheal Mary Consols	25	9
25b	Wheal Mexico	5	5
256	Wheal Mary Lanivet	2½	12
256	Wheal Norris	9	6
128	Wheal Penrose	—	5
128	Wheal Pollard	11½	12
128	Wheal Prospect	4	9
128	Wheal Providence	34	40
196	Wheal Reeth	1	60
256	Wheal Robins	12	4
128	Wheal Rose	40	25
256	Wheal Salusbury	13	5
512	Wheal Sarah	2½	5
99	Wheal Seton	150	825
1024	Wheal Spearne	1½	8
256	Wheal Sisters	25½	17
128	Wheal St. Cleer	21½	15
260	Wheal Trelawney	7½	110
256	Wheal Trevenna	3½	½
256	Wheal Trewennan	—	10
128	Wheal Venland	12½	12
256	Wheal Victoria	2	6
127	Wheal Virgin	—	50*
1024	Wheal Walter	3	6½
256	Wheal Williams	2	20

FOREIGN MINES.

Shares.	Company.	Paid.	Price.
5000	Alten Mining Company	14½	2½
15000	Asturian Mining Co.	6	3
10000	Anglo-Mexican Co.	100	3
3374	Ditto Subscription	25	4
2000	Bolmos	150	3½
12000	Ditto Scrip	15	4½
10000	Brazilian Imperial	20	4
12000	Cobre Copper Co.	40	23
8500	Colombian Co. regis.	55	4½
5000	Ditto Scrip	—	
10000	Copiapo Mining Co.	14	3
20000	General Mining Ass'n.	20	18
5051	Mexican Company	59	5
12000	Mocanbas & Cocnes	25	8½
29320	Rl. del Monte, regis.	28½	av. 32
	Ditto unregistered		
	Ditto Red Debentures	—	19
	Ditto Black ditto	—	17
	Ditto Loan Notes	150	117
7000	Royal Santiago	10	16
2000	Pachuca Mines	3	3½
11000	St. John del Rey	15	10½
43174	United Mexican	28½	3½

*** *We should feel greatly obliged by agents, or others interested, furnishing us with such corrections for our Share List as we may not have received through our usual channels of information—our object being, to present as accurate a list of prices as can be obtained—to procure which, we solicit the aid of correspondents in general.*

LATEST CURRENT PRICES OF METALS.

LONDON, AUGUST 28, 1845.

	£ s.	£ s. d.
Iron—Bar *a*..Wales..*ton*	0 0—	8 10 0
„ ..London ..	0 0—	9 10 0
Nail rods „ ..	0 0—	10 5 0
Hoop(Staf.) „ ..	11 5—	11 10 0
Sheet „ „ ..	0 0—	13 0 0
Bars „ „ ..	0 0—	11 0 0
Rails, average ..	9 10—	9 15 0
Welsh cold-blast foundry pig	4 5—	5 0 0
Scotch pig *b*, Clyde	3 14—	3 16 0
Russian, CCND *c* ..	0 0—	16 0 0
„ „ PSI ..	0 0—	16 0 0
„ „ Gourieff	14 5—	14 10 0
„ „ Archangel	0 0—	13 10 0
Swedish *d*, on the spot	11 0—	11 10 0
„ Steel, fagt.	0 0—	15 5 0
„ „ kegse	0 0—	13 5 0
Copper—Tile *f* ..	0 0—	92 0 0
Tough cake ..	0 0—	93 0 0
Best selected ..	0 0—	96 0 0
Copper—Ordin. sheets, *lb.*	0 0—	0 0 10½
„ bottoms .	0 0—	0 0 11½
Tin—Com. blocks *g*...*cwt.*	0 0—	4 12 0
„ bars ..	0 0—	4 13 6
Refined ..	0 0—	4 15 0
Straits *h* ..	4 11—	4 12 0
Banca ..	0 0—	4 14 6
Tin-Plates—Ch., IC *i*, *box*	1 9—	1 11 0
„ IX ..	1 15—	1 17 0
Coke, IC ..	0 0—	1 5 0
„ IX ..	0 0—	1 11 0
Lead—Sheet *k* .. *ton*	0 0—	19 10 0
Pig, refined ..	0 0—	21 0 0
„ common ..	0 0—	18 10 0
„ Spanish, in bd.	0 0—	17 15 0
„ American ..	0 0—	17 15 0
Spelter—(Cake) *l* ..	19 5—	19 10 0
Zinc—(Sheet) *m* export.*	0 0—	28 0 0
Quicksilver *n* .. *lb.*	0 0—	0 4 6
Refined Metal .. *ton*	4 15—	5 0 0

a Discount 2½ per cent. *b* Net cash. *c* Discount 2½ per cent. *d* Ditto. *e* In kegs ½ and ¼-inch. *f* Discount 3 per cent. *g* Ditto 2½ per cent. *h* Net cash in bond. *i* Discount 3 per cent. *k* Ditto 2½ per cent. *l* Net cash. *m* Discount 1½ per cent. *n* Discount 1½ per cent. * For home use it is 32*l.* per ton.

[From our Correspondent.]

Iron.—Demand for Welsh and Staffordshire continues fair, and the prices are steady; a good business has been done this week in Scotch pig at 73s. to 74s. for mixed Nos.; and at 75s. to 76s. for No. 1.—In foreign iron nothing doing, but sales of Swedish steel both on the spot and for arrival, have been made at quotations.

Tin and Tin-Plates continue in very good demand; and the stock of each article is very limited.

Spelter has been more in demand this week; sales have been made at 19*l.*, and 19*l.* 5s., and sales at 2s. 6d. higher are reported.

In other metals no change to report.

[Communicated by Messrs. Whitcomb and Barton, Old Broad-street.]

English bar iron continues very firm at the late advance; large orders are in the market at former prices, which have been declined.—In Staffordshire and Welsh pig iron the demand has greatly increased, and higher rates paid. The Scotch pig iron market has been rather dull during the week—holders, however, are not disposed to give way; orders being expected by the next American packet, which will, in all probability, greatly affect prices:—sales have been made to-day at 76s. 6d. and 77s. 6d., mixed Nos., bill at three and four months. Foreign iron and steel still dull of sale. In spelter sales are reported this week at 19*l.* 5s. and 19*l.* 7s. 6d.

CURRENT PRICE OF GOLD AND SILVER.

Foreign gold in bars ..	per oz.	£3 17 9	
„ „ Portugal pieces ..		3 17 5	
New dollars ..	per oz.	£0 4 9½	
Silver in bars (Standard) ..		0 4 11½	

GLASGOW PIG-IRON TRADE.

TO THE EDITOR OF THE MINING JOURNAL.

Sir,—There has been little doing here in Scotch pig-iron since the date of our last communication. A few parcels of No. 1 have been forced on the market for immediate payment, which realised 75s. Nothing considerable could be bought under 71s. 6d. for No. 3; 74s. for 3-5ths No. 1 and 2-5ths No. 3; and 76s. to 77s. 6d. for No. 1—cash, free on board.

Glasgow, August 26. DOUGLAS & HILL.

Stannaries Court.—To protect the privileges which the mining interests of Cornwall derive from the peculiar jurisdiction of this ancient court, Mr. Turner, the indefatigable member for Truro, has procured the insertion, in the general Small Debts Courts' Bill now passing through Parliament, of the following proviso, which seems to afford every possible protection to the existing Courts of the Stannaries, and to all parties interested therein—viz.: "Provided always, and be it enacted, that nothing in this Act contained shall be construed to affect the Courts of the Lord Warden, or of the Vice Warden of the Stannaries of Cornwall; but this proviso shall not be deemed to prevent the establishment of any court under this Act within the Stannaries, or to limit, or take away, the jurisdiction of any court so established."

East Wheal Rose Mine.—On Thursday, the 20th inst., the body of Luke Phillips, aged 19, one of those who lost their lives by the late accident, was found in the 90 fm. level, and about 27 fms. from Michell's engine-shaft. There are still two bodies remaining in the mine, those of William Pearce and John Stephens. We are glad to find that, in addition to the 500*l.* originally subscribed by the adventurers, a further sum of 500*l.* was voted by them on Monday last, for the immediate relief of the sufferers by the late deplorable accident. Cargoll adventurers have also contributed 100*l.* for the same benevolent purpose. The public subscription list does not advance so fast as was anticipated by many; but we are happy to learn that, from all sources, about 1600*l.* have been already contributed.

LAMHEROOE WHEAL MARIA (Lead & Copper) MINE:

IN 2048 SHARES.

WHEAL CONCORD SILVER-LEAD MINE: 1024 shares.
WHEAL MARY COPPER MINE: 1024 shares.
WHEAL WALTER LEAD AND COPPER MINE: 1024 shares.
LOSTWITHIEL CONSOLS COPPER MINE: 1024 shares.
WHEAL HOLWELL COPPER MINE: 2048 shares.
PRINCE EDWARD LEAD AND COPPER MINE: 2048 shares.
ECTON (Staffordshire) LEAD AND COPPER MINES: 1024 shares.
COSHIKEN (county of Cork, Ireland) COPPER MINE: 1024 shares.
ARDTULLY AND SHANEGARRY COPPER AND SILVER-LEAD MINES (county of Kerry, Ireland): 3500 shares.

The BUSINESS of the ABOVE MINES is now conducted at No. 4, KING-STREET, CHEAPSIDE, LONDON, where all INFORMATION respecting them, and the value of the shares, may be obtained, and specimens from each mine inspected, including recent ones from Wheal Concord, Ecton Mines, Coshiken, and Ardtully and Shanegarry. Dated August 22, 1846. JAMES CROFTS, Secretary.

COPPER

Sampled August 12, and Sold at Andrew's [illegible]outh, August 27, 1846.

Mines.	*Tons.*	*Price.*	*Mines.*	*Tons.*	*Price.*
United Mines	122	£5 7 6	South Caradon	74	£5 4 6
ditto	115	4 2 0	ditto	56	4 12 0
ditto	112	4 1 0	ditto	43	4 7 6
ditto	104	3 16 0	ditto	34	5 14 0
ditto	100	4 16 6	ditto	18	9 7 0
ditto	97	4 9 6	Treleigh Consols	90	3 16 6
ditto	90	3 7 6	ditto	62	3 15 6
ditto	84	5 11 6	ditto	61	9 18 6
ditto	73	5 10 6	Par Consols	106	5 16 6
ditto	67	4 9 6	ditto	94	3 12 6
ditto	59	4 0 0	Creeg Braws	65	6 18 6
ditto	38	4 7 6	ditto	56	5 6 0
ditto	25	3 16 6	ditto	20	3 15 6
Trekarean	95	5 10 0	ditto	5	2 1 6
ditto	71	3 18 0	Trethellan	52	2 7 0
ditto	70	2 14 6	ditto	44	4 2 0
ditto	60	5 19 6	North Downs	33	5 1 6
ditto	59	2 14 0	ditto	26	4 10 0
ditto	46	3 9 0	West Trethellan	31	2 18 0
ditto	28	2 14 0	Penstruthal	13	6 15 0
South Caradon	75	8 5 6	ditto	8	20 8 0

TOTAL PRODUCE.

United Mines	1092	£4865 19 0	Creeg Braws	146	£832 16 0
Tresavean	429	1741 19 6	Trethellan	96	302 12 0
South Caradon	300	1815 2 0	North Downs	59	284 9 6
Treleigh Consols	213	1183 14 6	West Trethellan	31	89 18 0
Par Consols	200	958 4 0	Penstruthal	16	148 19 6

Average standard £106 19 0
Average produce 7
Average price per ton ..... £ 4 15 0
Quantity of ore ..... 2582 tons
Quantity of fine copper ..... 180 tons 17 cwts.
Amount of money £12,243 13 6
Average standard of last sale ..... £ 89 2 0
Average produce ditto 9½

COMPANIES BY WHOM THE ORES WERE PURCHASED.

	Tons.	Amount.
Mines Royal	936	£1548 8 6
English Copper	384½	1821 3 0
Vivian and Sons	291	1310 12 0
Freeman and Co.	493	2584 1 9
Grenfell and Sons	144	429 6 0
Sims, Willyams, and Co.	527	2481 8 0
Williams, Foster, and Co.	506½	2082 6 3
Total tons	2582	£12,257 5 6

Copper ores for sale on Thursday next, at Serpell's Hotel, Pool.—Mines and Parcels.—North Roskear 900—Consolidated Mines 619—Tincroft 421—Wheal Seton 280—Fowey Consols 260—South Roskear 254—South Wheal Francis 205—South Wheal Basset 180—East Wheal Crofty 173—Wheal Harriet 160—St. Agnes Consols 115—Lanivet Consols 99—Hallenbeagle 79—West Fowey Consols 67—Tretoil 61.—Total, 3873 tons.

Copper ores for sale on Thursday week, at Andrew's Hotel, Redruth.—Mines and Parcels.—Carn Brea Mines 524—Par Consols 274—United Hills 237—Levant 217—Wheal Prosper 215—Wheal Buller 95—Trenow Consols 83—West Wheal Treasury 78—Botallack 71—Wheal Rodney 52—Alfred Consols 50—North Wheal Basset 43—Carn Perran 29—Bastian's Ore 26—Wellington Mines 11—Wheal Brook 7—Wh. Caroline 7—Wh. Weeth 2.—Total, 2023 tons.

COPPER ORES

At SWANSEA, for Sale, Sept. 2.—Cobre 100, ditto 99, ditto 96, ditto 95, ditto 74, ditto 94 ditto 90, ditto 85—Chili 95, ditto 90, ditto 86, ditto 67, ditto 56, ditto 52, ditto 50, ditto 49, ditto 50, ditto 48, ditto 30—Cronebane 117, ditto 85, ditto 80, ditto 55, ditto 53, ditto 38, ditto 15, ditto 10, ditto 7, ditto 1—Tigrony 1—Cuba 100, ditto 90, ditto 112, ditto 35, ditto 25—Knocnahalon 119, ditto 105, ditto 62, ditto 56, ditto 39—Cube 98, ditto 91, ditto 84, ditto 67,—Berehaven 129, ditto (not ready)—Ballymurtagh 79, ditto 44, ditto 26—Llandidno 33, ditto 30—Abey Regulus 45—Kapunda 5.—Total, 3352 tons.

SILVER-LEAD ORE

Sold at St. Agnes, the 19th August, 1846.

Mine.	*Tons.*	*Price.*	*Amount.*	*Purchasers.*
North Wheal Rose	21	£16 3 0	£338 8 0	Mullins and Co.
ditto	10	8 0 0	80 0 0	Combmartin Co

Total tons, 31.—Amount of money, £418 8s. 0d.

Sold on the 22d of August, 1846.

Mines.	*Tons.*	*Price.*	*Amount.*	*Purchasers.*
Cubert Silver-Lead	30	£11 16 0	£354 0 0	Walker, Parker, & Co.

BLACK TIN

Sold at Truro, on the 25th of August, 1846.

Mine.	*Cuts.*	*Price per ton.*	*Amount.*	*Purchaser.*
Wh. Beam (Devon)	58	£47 2 6	£136 13 3	Williams and Co.
ditto	40	47 0 0	94 0 0	Bolitho and Co.
ditto	33	45 5 0	74 13 3	Daubuz.
ditto	17	45 7 6	38 11 4	Ditto.

Total, 148 cwts.—Amount of money, 343*l.* 17s. 10d.

WORK PERFORMED BY CORNISH ENGINES.

The number of pumping-engines reported for the month of June is 27—the quantity of coals consumed being 2400 tons, lifting, in the aggregate, 23,000,000 tons of water 10 fathoms high—the average duty of the whole is, therefore, 52,000,000 lbs. lifted 1 foot high by the consumption of a bushel of coal. The following have exceeded the average:—

Mines.	Engines.	Length of stroke	Load in pounds.	Load per sq. inch on plat.	Strokes per min.	Consump. of coal in bus.	Million lbs. lifted 1 foot by consump. of 1 bush. coal	Average quantity of water per min.
Wh. Prosper	Roberts's 70-in.	9·75	73,374	14·6	5·4	2700	55·3	571·4
Godolphin	Sims's 80-in.	10·0	78,756	12·5	5·4	2640	65·1	—
Ditto	Roberts's 80-in.	10·0	64,096	10·2	6·8	3182	55·7	907·6
Great Work	Leed's 60-in.	9·0	47,391	13·0	7·7	2075	54·9	183·2
E. W. Crofty	Trevenson's 80	10·33	84,887	12·6	2·5	1628	52·9	141·5
Poldice	Sims's 85-in.	10·0	75,244	9·3	6·3	2968	53·2	447·3
Carn Brea	Sims's 50, 90 in. combined	—	—	—	—	—	—	—
United Mines	Taylor's 85-in.	11·0	91,656	14·6	6·2	3436	83·4	1338·0
Ditto	Eldon's 30-inch	9·0	13,631	16·0	8·5	634	69·7	
Ditto	Loam's 85-inch	10·0	85,320	11·8	5·8	3170	61·9	
Ditto	Hocking's 85-in	10·0	98,189	14·6	6·2	4357	60·4	
United Hills	Williams's 80	10·6	73,988	11·7	6·4	3660	62·8	441·2
East Wh. Rose	Penrose's 70 in.	10·0	45,257	9·8	4·8	1272	70·9	863·5

NOTICES TO CORRESPONDENTS.

Cost-book System.—We are compelled to postpone an original article, as well as several letters from correspondents, on this subject.

We have also on hand Mr. Weston On Compressed Air—Improvements in Working Pile Engines—Atmospheric Railways—Dr. Drake's Ignition Engine, &c., &c.

"Asturian."—We were unable to obtain the information—the directors wishing that such matters should only be published at the appointed periods, when every particular will appear in the Journal.

"T. M. L." (Battersea).—The letter of Dr. Murray, on the patent of Mr. Jones, of Bristol, for improving the present mode of concentrating sulphuric acid, had reference to a short descriptive account of the invention published in page 333 of the *Mining Journal*, August 8. Doubtless, Mr. Jones would supply "T. M. L." with any additional information he may require, and for which we should be happy to afford space, for the information of our readers generally.

Received—W. Mitchell (Truro)—"An Old Subscriber"—"J. B."—"A. T. J. M."

THE MINING JOURNAL

And Atmospheric Railway Gazette.

LONDON, AUGUST 29, 1846.

An early announcement is expected to be made by the East India Directors of the extent of railway to be commenced in India under their auspices, upon the report of the engineers, detailed in a previous Number of this Journal.

On Wednesday, with seven additional railway bills, and other Acts, that then received the Royal Assent, is an Act for the immediate loan of money for the execution of public works in Ireland, to be advanced within the ensuing twelvemonth, at 3½ per cent. per annum, and to be repaid in the course of the next 10 years. The employment these works will give to the Irish labourers should assist in enabling, at least, some portion of them, to purchase other food to supply the deficiency in the potatoe crop,—and on this subject we refer to the inference drawn in our last publication, that the exportation from America of Indian corn, to make up for the anticipated deficiency in the potatoe crop in Great Britain and Ireland, will, under the new American Tariff, promote importations into America of British iron.

The extraordinary and vastly-increasing mineral wealth of South Australia has already, it appears, begun to excite the cupidity of its colonial officers, who, "dressed in a little brief authority," have actually taken upon themselves, in spite of special Acts of Parliament, under which the Crown lands were to be sold, and which are in fact the "Magna Charta" of the inhabitants, to pass laws and regulations, reserving to her Majesty $\frac{1}{15}$th of all metals, ores, and minerals, lying under any lands in South Australia. Now, in the last session of Parliament, a proposed clause, in a bill to amend the Australian Waste Lands Act, was withdrawn from the due consideration, that such clause would be an infringement of the most sacred rights of the colonists; and in another bill, introduced this session, no such right is reserved. Yet here we have a Governor Rone and his executive Council, taking upon themselves the functions of Parliament, and passing a law, unsanctioned by that body, upon what is likely to prove, if left unshackled, the greatest source of wealth to the colony—its mineral wealth! This precious document is drawn up with all the technicality and verbosity of a lawyer's brief, or an Act of Parliament, attempts at powers and reservations in letting mineral land far more extensive than our own Duchy in Cornwall possesses, and is a fine specimen of the interest taken by these colonial officials in the pecuniary affairs of their Royal mistress—*Query*: Is there not some patronage, and more pickings expected, if suffered to carry out the obnoxious measure? It first enacts, that a due or dish of $\frac{1}{15}$th be reserved on all mineral lands; 2, a right of free access to all mines by duly appointed officers; 3, a right to a quarter of an acre of land near every shaft, for a residence for such officer and store; 4, the right of commuting the 15th dues for payments in money; 5, the right of recovering such payments by distress, as for rent; 6, *all such questions to be determined by the Governor in Council*; 7, lands to be sold *in general* as heretofore, but with the reservation; 8, lands already put up for sale, and not sold, will be subject to the same dues; 9, lands known to contain ores will be let on lease for 21 years, subject to competition at public auction; 10, for mineral lands, the leases will be proclaimed for sale on the same terms as in fee simple; 11, all leases to contain clauses of forfeiture and re-entry; 12, the proceeds of the dues to be applied to the same purposes as from the sale of waste lands under 5 and 6 Vict. cap. 36; and 13, a fee of 1*l.* sterling to be charged for every lease, exclusive of the registration fee, under the above Act. Verily, it is pleasant to be in power! We trust, however, that the Queen *in Council* will lose no time in letting this Governor *in Council* know, that he is not sent out as the Governor of a colony to make arbitrary laws after the fashion of an autocrat of Russia, or other despotic sovereigns; but that he is placed there to see that the *laws of England* are duly administered, and to watch over and protect the interests of the inhabitants. Already has the measure rendered its author most unpopular in the colony. A numerous meeting was held on the 21st March last, attended by the most influential colonists—at which resolutions were passed, deprecatory of the whole measure, alleging that the imposition of dues on minerals was illegal, unjust, and impolitic, highly injurious to the best interests of the colony, and tending to check the revival of emigration from the mother country—that the *repeated attempts* of the Colonial-office to set at nought in this colony the stipulations, and solemn engagements, guaranteed to the colonists by Acts of the Imperial Parliament, are subversive of that confidence and respect which the settlers have ever entertained, and are desirous of continuing to entertain, towards the parent state.—3. That respectful and urgent petitions be presented to the Houses of Lords and Commons, expressing the grievances of the colonists in reference to the regulations in question; and that such petitions be adopted, signed, and transmitted to the South Australian Society in England for presentation, accompanied by a request, that they will take the most active measures to obtain support to the petitions in both Houses, and the speedy relief sought by the colonists.—4. That pending the result of the appeals to the Parliament of Great Britain, for obtaining the redress of these grievances, this meeting considers that application should be made to his Excellency the Lieutenant-Governor for the withdrawal of his Excellency's late regulations, that the sales of the waste lands of the colony may be conducted as heretofore.—This is as it should be: the governors of this distant colony have, from its establishment, shown too much fondness for despotic government; and we trust that this glaring attempt at making laws in defiance of the English Parliament, will meet the fate it merits. It appears that one plea put forth in favour of these regulations is, that, in reserving dues on mineral lands, it is only putting South Australia on an equal footing with New South Wales; but nothing can be more absurd: for 50 years the latter was a convict colony, the former never; New South Wales as a colony was founded by squatters, and the land granted free—South Australia by purchasers of land, none at less than 1*l.* per acre, while the title was absolute and unconditional, without reserve of any kind. New South Wales is absolutely a pastoral country, and occupied by large stockholders—South Australia will evidently become more an agricultural and mining district, and in no one point can the two colonies be assimi-

lated. Let us hope that the colonists will make their voices heard by the Parliament, through the Government here, not only for the prevention of this abuse of power, but also to obtain that representative government, which they have so long been promised, and which cannot, we think, be now refused, without further breach of good faith on the part of the Government.

It gives us great pleasure, on all occasions, to be able to record the successful operations of mining adventure, and more particularly when such success has been preceded by years of depression and loss,—and, just as the adventure was about to be stopped, to see it rise like the fire destroyed Phœnix from its ashes to a state of health and vigour. Such appears to be the present state of the Alten Copper Mines. For years has this company been on the brink of winding up, from continuously working at a loss, and the absence of those more prominent indications of permanent improvement, which would induce the adventurers cheerfully to advance capital to continue the spirited prosecution of the works. The report, in our last Number, of the annual meeting of the shareholders, held on the 21st instant, is a pleasing instance of the success attending steady perseverance, and judicious economy; by reducing expenses to the lowest possible limit, consistent with keeping up the necessary force, and pursuing the works of research in a scientific manner, the company is now in a position to see the mines worked to a profit, instead of being a dead and annually recurring loss. The loss for the year ending the 31st March, was 200*l.* less than estimated, while the profit on the past six months has been 1300*l.*; and if present appearances continue, of which there appears no doubt, at the meeting in October next a dividend of 5*s.* per share will be declared. We hope now to see these mines continue in successful working, as they have ever been considered by numerous parties, well acquainted with mining operations, as a property of much interest and value.

In another column will be found a report of a meeting of the shareholders in the Callington Mining Company—being the first since the reorganisation of the rules, and the passing of a resolution to have quarterly, instead of annual, meetings. It will be remembered that, at the last annual meeting, and at an adjourned one, considerable discussion ensued as to adding to the direction, and altering the regulations, which was at length settled, by adding Messrs. Field and Fraron to the direction, and agreeing to a new code of rules for the government of the company. We are happy to observe, that the enlarged direction works well; the greatest harmony prevails as to the adoption of measures for the interests of the undertaking, and the whole business appears to be conducted with commercial regularity. It must also be matter of congratulation, both to the directors and the shareholders generally, that the position of the mine itself tends to cement this harmony among the adventurers. It will be seen that a reduction has been obtained in the dues payable to the Duchy from $\frac{1}{15}$th to $\frac{1}{20}$th—that decreased costs and increased returns are confidently anticipated as a future result; and as, while such returns are made, extensive portions of new ore ground will be opened—the shafts being down 10 fms. deeper—and as much expectation exists of further discoveries, on getting through the great cross-course—there is every reason to hope that the Callington Mines will give large and permanent profit for years to come.

The subject of the Cost-book System, treated on in our late Numbers, has we find excited considerable interest, not only with those parties who have heretofore considered themselves protected, but has elicited many inquiries on the part of those who have of late been induced to invest their capital on the assurance that no responsibility was incurred beyond the two month's cost; but which, we think, we have clearly shown is not the case. In resuming the question, we may observe, that doubts have been raised in certain quarters, whether, in the case cited—that of a supply of materials for the use of the mine—the merchant can have a claim on the party who shall have been an adventurer when the order was given, or contract entered into; he having, antecedent to the period of delivery, assigned over his interest to another party, who may be said to represent him, and who, by virtue of the assignment so made, takes upon himself the liabilities which the vendor may have incurred. We repeat that, while the argument may hold good, as between the two parties, yet such can in no way affect the interests or claims of a third party, who, undoubtedly, in default of payment, is entitled to proceed against one or other of the adventurers for the time being when the contract is entered into—and thus the importance of a strict adherence to the Cost-book System is indispensable for the protection of all parties. We need hardly observe, that the assignment of shares is only known to the parties and the purser in the first instance, even when the transfer be duly registered, unless any inquiries should be instituted by an adventurer, after the transfer shall have been entered; and hence, the merchant or factor cannot be supposed to know of any transfer or change which may have been effected, without an intimation being made to him to such effect; and even then we question whether the party so transferring could release himself — the liability having been once incurred, and the order, perchance, being on the eve of completion. As opposed, however, to this view of the question, the case of a partnership has been cited, where one of the firm retires; and such circumstance is noted in the *London Gazette*, which is *assumed* to be read by every one, and to be a legal and recognised notice of a dissolution of partnership; but it must be recollected that the two cases are by no means parallel—in the one, the Cost-book System is presumed to be acted upon; in the other, that of an ordinary partnership, which is governed by distinct and different laws.

Having made some remarks in another column, in considering the propositions put forth by a correspondent in our last week's Journal, we have only again to impress on adventurers generally the importance of the subject being seriously considered; and where any dereliction from the strict observance of the system exists, that such should be forthwith remedied. With the view of directing, or throwing out hints, as to what the Cost-book System is, and what is in too many instances acted upon as such, but which is, at least, in our opinion, founded on an insecure and imperfect basis, we will now proceed to state our crude notions, without wishing to convey that such are correct; although, we believe, in the main, they will be generally admitted as representing the opinions entertained by all those who wish to carry out the system fairly and honestly. Thus it is—a mine being taken up by a party of adventurers, it is agreed upon between them that it shall be divided into a certain number of parts or shares—say, 128, or 1280—for this is immaterial; although, in times gone by, the majority of adventurers did not number more than 64 or 128 shares. A meeting is held, and a cost-book opened, in which are entered the proceedings at their first meeting, and the names of the adventurers, with their proportionate interest in the adventure. A purser is nominated, whose duty it is to keep the accounts, and take the general management of the financial matters, as the agent or representative of the body of adventurers—and whose duty it is to enter the monthly costs in the cost-book, as also to record all transfers therein which may be made from time to time, and to convene meetings, when the accounts are submitted, and calls, if necessary made, or division of profits. All measures of an important nature—such as appointment or change of agents, increased workings, or reduction of expenditure, being determined upon in like manner—indeed, the direction and management, as also the control over the financial affairs of the mine, is with the body of adventurers, who register in the cost-book the nature of the proceedings, or the resolutions adopted at the respective meetings, which, being entered in the cost-book in the same manner as the transfers, renders the cost-book in itself the only record of the proceedings, and the only legal evidence of the ownership of a share, or its transfer—while it serves as a minute-book and a monthly cost-sheet. It will thus be seen that the adventurers, as a body, have a controlling power—that all acts of an important nature are performed by them, and not delegated to a few committee men—while the simplicity of the arrangements, by having the accounts made up, and a balance sheet laid before the meeting once in every two months, and a division of the cost or profits made, no liabilities are incurred beyond those for the running two months—and hence the opinion which so generally prevails, that no responsibility is incurred; while the adventurer, at all times, has the power of withdrawing, on payment of his proportion of costs, as already observed upon. That an avoidance of responsibility would really be the case, if the system was adhered to, we admit; but, unfortunately, we believe such course is rather an exception to the rule.

Let us now, then, see how matters are generally managed under the so *mis*-called Cost-book System. A company is formed to work a mine—a committee *self-appointed*, arrogate to themselves certain powers, and make calls on the shareholders or adventurers—certain rules or conditions are laid down, and provision made for the forfeitures of shares in cases of non-payment—meetings are held once or twice in the 12 months, and a power possibly vested in the shareholders to convene special general meetings, if they shall think fit. The committee appoint or remove all officers, the funds of the company are placed at their disposal, and, when exhausted, they assume to themselves the power of calling for more, without condescending to give an account of their stewardship, or the mode in which the funds placed in their hands have been disposed of; liabilities are incurred, additional setts taken, new workings opened upon, others abandoned—in fact, the committee do just as they please. If we look then upon this picture and on that, it will, we think, be clear, that a mine, managed as in the latter case, cannot come under the Cost-book System. And if it does not—what law, we would ask, governs it? or, whether is it not out of the pale of the law, while every transfer is, in the face of the Joint-Stock Companies' Registration Act, invalid, from not having been duly registered, according with the forms therein laid down. This is taking another view of the case, and involves the question of "pains and penalties," which is of sufficient importance to merit a separate notice.

We have, on many previous occasions, referred to the monopoly of the Salt Trade by the East India Company, in the Indian presidencies, and endeavoured to show, to the fullest extent, the destruction of health and vigour both in man and beast, and the prevention of the proper cultivation of the soil—while, instead of its being a source of profit to the Company holding the disgraceful privilege, it is a positive and vexatious loss. We gave, in last week's Mining Journal, a report of a meeting of the Chamber of Commerce of the White Salt Trade, held at Northwich, on the 13th instant,—at which resolutions were passed, plainly indicative of the feelings of the large body of merchants engaged in the trade. Another meeting of the salt trade of England is to be held on Monday next, when Mr. Aylwin is expected to attend. In the Journal of the 1st inst. we noticed the private circulation of a pamphlet on this important subject, by a Calcutta merchant. The author is the above gentleman, and the present is a most appropriate moment for giving an abstract of the work in question. It conveys the fullest information as to the origin of the impolitic impost, which now prevents the export to India of this necessary of life from England,—and also its efforts in depriving the population of one of the greatest promoters of health, and debasing their morals by encouraging smuggling, and infringing on the laws of the Government under which they live. The early history of this tax is curious, and it evidently arose from the imposition and peculation of the Company's servants, who, from the members of Government downwards, chiefly depended on the profits from a privileged trade for remuneration of their public services, in which SALT was always the principal article. This privileged trade arose at a very early period of the East India Company's trade with India, when a *firmaun* was obtained from the Mogul emperor, where "whatever goods and merchandise their agents might bring or carry, by land or water, in the ports, quarters, and borders of the provinces," were wholly exempt from duty. This exemption naturally threw the whole private trade of the country into the hands of the Company's servants,—for, although at first confined to exports and imports, was at length extended to all goods sold by agents, which were allowed to pass free, and under cover of *perwanehs* (permits), which came at last to be issued by anybody assuming English authority, even by private merchants out of the service, the greatest enormities appear to have been committed, not only in the way of trade, but against *zemindars*, *talookdars*, ryots, and others connected with the Government revenue. The revolutions and depositions which took place in Bengal from 1756 to 1764, with the miseries of the Blackhole, and the cruelties and murders of English agents and dependants during that period, were all very much connected with the iniquitous practices and excesses of these traders and their agents. To such a pitch did they hereafter arrive, that the Court of Directors at home wrote to Bengal on the subject, stating "that an unbounded thirst after riches seemed to have possessed the whole body of their servants, and that they had lost all sight of justice, and their duty to the Company." They looked to the expected arrival of Lord Clive, and the select committee in Calcutta, to remedy the evil, ordered the whole trade to be discontinued, and a formal renunciation of the right to be transmitted to the Nabob. In 1765, Lord Clive's Government conceived themselves intrusted to regulate the trade. Accordingly, all private agents were recalled from the interior; a society was formed for the exclusive purchase and sale of salt at certain markets, at a certain fixed price—viz., 15 per cent. below the average price of 20 preceding years; and a duty of 35 per cent. was fixed on the sale of the article for the benefit of the Company, for which the committee were made answerable, and which in 1765 produced 120,000*l.*; in 1765 it was increased to 50 per cent., producing 160,000*l.*; in 1767 the society was abolished,—and in lieu of profits a commission of 2½ per cent. was distributed among the servants, which amounted to 63,000*l.* per annum. The manufacture was now thrown open to merchants and zemindars, but under restrictions; and in 1772 it was determined that salt, in every part of the presidency, should be on the same footing—that the salt should be made by the Company—that the manufactories should be let in farm for five years—that the farmers deliver the salt at a stipulated price; and it was then dealt out to the native dealers at another fixed price. Several other changes took place, which neither benefitted the population or the Company, up to 1833, when the Company's charter expired; and in the Act of 3 and 4 Will. IV., for effecting the arrangements necessary thereon, there is a clause, "that they are to discontinue and abstain from all commercial business which shall not be incident to the closing of their actual concerns, to the conversion into money of their property, or which shall not be carried on for the purposes of Government." We now come to the object of the author, to show that the principle on which the existing duties are fixed was, that they should not fall short of the cost of provision, *plus the duty on imported salt. If, then, we shall find the Government has not netted three rupees per maund (the duty on imported salt), they have in fact caused a loss to the revenue by manufacturing, and a continuation of the monopoly by the East India Company cannot be justified, even on the score of revenue.* He then shows that, from the total quantities of salt manufactured by them, between 1793 and 1845, the revenue should have amounted to 71,204,266*l.* sterling, when in fact it only amounted to 60,626,821*l.*—thereby showing a loss of 10,500,000*l.* sterling; and it would thus, as regards revenue, been infinitely more advantageous for India to have been supplied with British imported salt, paying the Customs duty of three rupees per maund, than to have had the article furnished as it has been, by the Government manufacture. The consumption of salt, as shown by the duty paid in proportion to the population, is exceedingly small; and the fact is, that the balance between the amount manufactured by the company, and the consumption is made up by *smuggling*—of the extent of which, a person not conversant with India can have no conception. Every one gives encouragement and ready assistance to the smugglers of salt: the head men of villages are most courteous in affording them protection, and all classes combine to defraud the Government of its revenues, in order to obtain this requisite of life at its cheapest rate. It is often sold in villages at half the amount it ought to pay duty,—and, in fact, two-thirds of the whole consumption is smuggled. The author then proceeds to prove that, if it was in the power of the owners, they would give their sheep and cattle salt—the want of which seasoning makes them, with the horses of Bengal, the smallest, most puny, and worst conditioned, in any part of India: that the total population of India, dependent upon the supplies of salt from the three presidencies, is 146,000,000; and allowing them 15 lbs. per head per annum, which is less than a sepoy is allowed on foreign service, would require not less than 979,287 tons per annum, a large proportion of which England could supply; to what advantage to the exporter is proved by the fact, that salt costs 20 times the amount in Calcutta that it now does in Liverpool; that a complete revolution would take place in the condition of the India shipowner, now struggling with the serious and almost paralising influence of steam; and that, from the extreme cleanliness of the Hindoos in their diet and clothing, should they ever be able to procure the pure white production of Britain, they would never consume the dirty and impure solar salt from the gulfs. The author then approaches a most important part of the subject—viz.: the tendency of the continuance of the monopoly to curtail the production of sugar, as well as the consumption of British manufactures; and we cannot do better than give his arguments as near as possible in his own words. Every return of the state of the English sugar market—every step taken by the minister for facilitating importation—only serves to show how much England stands in need of a much larger, and more regular, supply of that invaluable necessary of life. It was expected that the equalisation of the duties would have given an impetus to the East India manufacture, rendering us quite independent of slave-grown sugars, and the deficiency resulting from the absence of free labourers in the West Indies. This calculation was made without due inquiry into the manner in which sugar was grown in India, and the consequent necessity for coupling one legislative measure with another. The relief was too partial to be of use, either to England or to India. The sugar-grower there is a poor ryot, who farms a small plot of ground, and can only produce enough of the commodity to yield him the bare means of existence. *Abate the charges on the necessaries of life—reduce the heavy tax upon his few pounds of salt*—remove the dead weight which presses upon his energies, absorbs his little capital, and consumes his time,—and the elasticity of his power becomes at once apparent. He makes more sugar—he improves his little estate—he strengthens his cattle—he receives larger profits—and, from the nearly naked husbandman, he transforms himself to the well-housed and *well-clothed* landholder. Long-cloths, jaconets, and madapollams, then constitute a wardrobe, which now scarcely rises above the primitive fig-leaf, and Manchester finds fresh occupation for 10,000 looms—fresh and almost illimitable profits for her enterprising manufacturers.—We have said that there are 140,000,000 of inhabitants of British India interested in the reduction of the price of salt. Say that one-third of this number, or 46,000,000, are enabled, by the importation of the commodity from England, and the consequent great extension of the sugar trade, to become consumers of only clothing enough to cover their bodies, estimating an annual average of 3 ft. for each individual; we thus have an additional market opened for the cotton and yarn manufactures of this country, of no less than 46,000,000 yards of cotton cloth; and I would ask, whether this alone (no higher motives operating), is not sufficient stimulus to the commercial ambition of the Manchester manufacturer, to induce him to lend his powerful aid in the destruction of the East India Company's salt monopoly? It is unnecessary to pursue the question further, though its fertility presents abundant temptations to enlarged discussion; here has been offered an outline sketch of the leading features of a great question, discussed at length in a most comprehensive work.

PRESENT STATE OF THE IRON TRADE.

The several iron districts present the most flattering appearances; the full compliment of hands is in general employed, and, in addition to the existing works, new establishments are being brought under the notice of capitalists almost every week. We have, during the week, made some inquiry at the London offices, and we can give the following as authentic:—

New British Iron Company.—It will be remembered that, at the last meeting, a dividend of 2*l.* per 10*l.* share was declared, or 20 per cent. Since then orders have poured in so fast, that it is impossible to keep the supply equivalent to the demand, and the most remunerative prices are obtained; there is every reason to suppose this unusually large dividend will be continued.

Blænavon.—This company have increased their sales to a very considerable extent—the greatest animation is observable at the works, and more business is doing, and at better prices, than at any previous period.

Galvanised Iron Company.—Since the increased capital of this company has been brought into action, a corresponding increase of profitable business has been the result—vastly increasing numbers of orders, at the best prices, are continually arriving—and this company may now be considered as established on a permanent and profitable basis.

Amman Vale.—This company, established last year, has not yet got into active operation; when such is the case, we shall notice their position and prospects.

Nister Dale Iron Company.—This, it will be remembered, is a company formed for working some rich ores in the province of Nassau, in Germany: they have hitherto purchased their pig-iron, but two furnaces will be in blast in October, at the latest; and in the meantime they are driving an extensive business in rolled and other wrought iron, both at the works at Nassau and in Sheffield.

Asturian Mining Company.—Additional advices have been received from the works, during the past week, fully corroborative of the favourable anticipations alluded to in the Journal of the 16th Aug., as contained in the reports then received by the directors. It appears, however, that the local superintendent requires the assistance of some additional hands, particularly engineers, and such as are familiar with iron manufacturers. The company obtained in May last a concession for a railroad to the sea, passing directly through the mines. This concession has, upon certain conditions, been made over to Mr. Bushenthall, a large shareholder in the mining company, who has undertaken the construction of it with purely Spanish capital, and has formed for the purpose a strong directory at Madrid, where the shares are all subscribed for, and held at a premium. In the early part of the ensuing year, the engineer-in-chief expects that the mining company will be in a condition to pay a dividend to the shareholders, upon the paid-up capital, of 15 or 20 per cent. from actual returns, grounding his opinion that this may be done upon various calculations. In Sept. next, the first furnace will be in full blast, when, from the quantity and quality of the ore, the company will be able to manufacture iron as cheaply as it may be done in the most favoured districts in this country. Its manufacture is also protected by the almost prohibitory *ad valorem* duty on importation of 16*l.* to 20*l.* per ton. Iron is, moreover, in great demand in Spain, and sells freely, especially for light fabrics, such as balconies, railings, &c., at from 25*l.* to 30*l.* per ton, and in bars at from 18*l.* to 22*l.* per ton—leaving, consequently, a profit of fully 15*l.* per ton. Other advantages, having reference to the supply of coke to certain ordnance works of the Government, which is done by the company, and to the possession of a quicksilver mine, at present worked only to pay its expenses, but which may be turned to great account when attention can be withdrawn a little from the more important operations of the company, are adverted to as contributing to the probability of highly satisfactory results.

Copper Substitute for Wood and Iron in Boat-Building.—We have been informed of the introduction of a novelty in river and port navigation, which, if it bears out all that is claimed for it, cannot be long before it comes into general use. It is nothing less than a boat of copper, made of four sheets only, stamped to due form by powerful machinery, and rivetted together; it is 23 ft. long 5 ft. wide, has four times the strength of wooden boats, and requires one-third only the power to propel at the same speed as a wooden boat of the same dimensions; one-third less weight; no caulking, renailing, or pointing, is required; and, when worn out, the metal will sell for three-fourths of the first cost. Boats, cutters, gigs, ship's boats, race boats, and others, from 10 ft. to 60 ft., may be made in four pieces; their strength has been tried by dashing them against rocks, and running a-head against stone piers, and it appears almost impossible to sink them. Verily, this is an age of wonders!

Extent of the United States.—The United States have a frontier line of more than 10,000 miles. We have a line of sea coast of 4000 miles, and a lake coast of 1200 miles. One of our rivers is twice the size of the Danube, the largest river in Europe. The Ohio is 600 miles longer than the Rhine, and the Hudson has a navigation 120 miles longer than the Thames. The single state of Virginia is a third larger than England. Ohio contains 5,120,000 acres more than Scotland. From Maine to Ohio is further than from London to Constantinople, and so we might go on and fill pages, enumerating distances, rivers, lakes, capes, and bays, with comparative estimates of size, power, and population.—*New York Sun.*

PROGRESS OF FRENCH MINING INDUSTRY.

[FROM OUR PARIS CORRESPONDENT.]

In the report addressed to the mining engineers by the Government, it is stated, with reference to Algiers, that the principal deposits of iron ores, similar in quality to those of Sweden and Elba, are in the Mont Boudjareah (near Algiers), in the Little Atlas (near Blidah), in the Mont Zakkar (near Milianah—at this place Abd-el-Kader established a furnace), at the Ain Talazid Mouzaia, the mountain of the High Chiffa, in the ravinés of the High Cheliff, in the Ouaransensis (near Tenes), at Cape Ferrat (near Arzew), at the Mont Guerbes, at the Monts Bouhamra and Belelicta, at the Morkhra-el-Hadid (near Bone), at the Djebel Fill Fella, and at the Schikida (near Philippeville). "Several of these deposits (says the report) were conceded in 1845, but none had been worked at the end of that year,"—a fact certainly of considerable importance, after all the swagger that has been made, during the last three years, about the vast mineral wealth of Algiers. In the mountains of Bougie there exist also important deposits of carbonated iron ore, and the Kabyles manufacture it into iron, with which they make their weapons. These deposits, however, if in the hands of the Kabyles, can scarcely be considered as belonging to the French. Mines of copper thus far have only been discovered in the province of Algiers. The most important deposits are described to be those of the Mouzaia, near Medeah, and of the mountains of Tenes, near the town of that name. Those of Mouzaia are three in number, and contain grey copper *antimonifère*, associated with *fer spathique*. The copper rendered on an average of several assays, 28 kilogrammes of copper, and 118 grammes of silver, for each quintal. It contained also 20 to 21 per cent. of antimony. It is believed that it had never been treated by the Arabs, the separation of copper from antimony being a most difficult operation, and far beyond what may be expected from their scientific knowledge. In 1844, a concession in this neighbourhood was granted to a company, and, says the report, "some steps have been taken in the working of it." The deposits of Tenes offer some copper pyrites, and others grey copper, mixed with plumbago. The copper pyrites carefully analysed presented 25·8 per cent. of metallic copper, and the grey copper also carefully analysed 22·5 per cent. As to the working of these deposits, the report only says, "that in 1845 several of them were the objects of examination." Lead ore exists in Algiers. It is plumbago *argentifère*, and carbonated lead. The plumbago deposits are at Boudjareah (near Algiers), in the neighbourhood of Fondouk, in the Ouaransensis near Tenes, and near Setif, where the Kabyles have some extensive establishments. Carbonated lead exists at Guelma and La Calle, but the deposits are said to be of little importance. Ore of manganese, up to the present time, has only been found on one single spot, at the Mont Boudjareah, near Algiers. Mines of mineral salt of great importance have been discovered in the hills of the Tell, and in the plains of Sabara, but nothing positive is known respecting them. The Kabyles work those of Milah, and supply with the products thereof themselves, and the town of Constantine. The greater part of the salt consumed in Algiers comes from salt lakes, which dry up in summer, and which are believed to be over mines of mineral salt. As to the pretended discovery of coal, about which so much was said some months ago, the report says nothing. Indeed, the only reference it makes to anything of a combustible nature in the colony, is in the three following lines:—"There exist at the south west angle of the Cape of Desmendou, near the road from Philippeville to Constantine, *des affleurements de lignite*, which present great analogy to those of the department of the Bouches du Rhone." Such is a faithful summary of the statements of the Government engineers, relative to the mineral wealth of Algiers. It proves most triumphantly the correctness of the opinions so frequently put forth in the *Mining Journal*, that Algiers is not, and is never likely to be, in a position to make up the deficiencies in the mineral products of France. In fact, it shows that even the iron ore it does possess has not yet been turned to account by the companies that have obtained permission to work it; and as to the other mineral products, they might as well have remained undiscovered for any benefit they seem likely to confer on the colony, or the mother country—and even if it is assumed, that Algiers possesses all the enormous variety of mineral wealth which the fervid imaginations of certain individuals have pictured, still it will be of comparatively no value in a place where there are neither canals nor railways, nor even common roads, and where the only thing approaching to fuel is some *affleurement de lignite*.

The Government has ordered researches to be made in the department of Moselle, in the hope of discovering coal.

When at Palma the Prince de Joinville is said to have made very particular inquiries, as to whether any description of ore was to be found in that and the neighbouring isles; and on being answered in the affirmative, requested that specimens might be forwarded to him. This circumstance has no other importance than to show the anxiety of the Government to obtain all possible information relative to such subjects, with the view, no doubt, of knowing where to obtain, on the most favourable terms, the supplies of ore, of which the country has need.

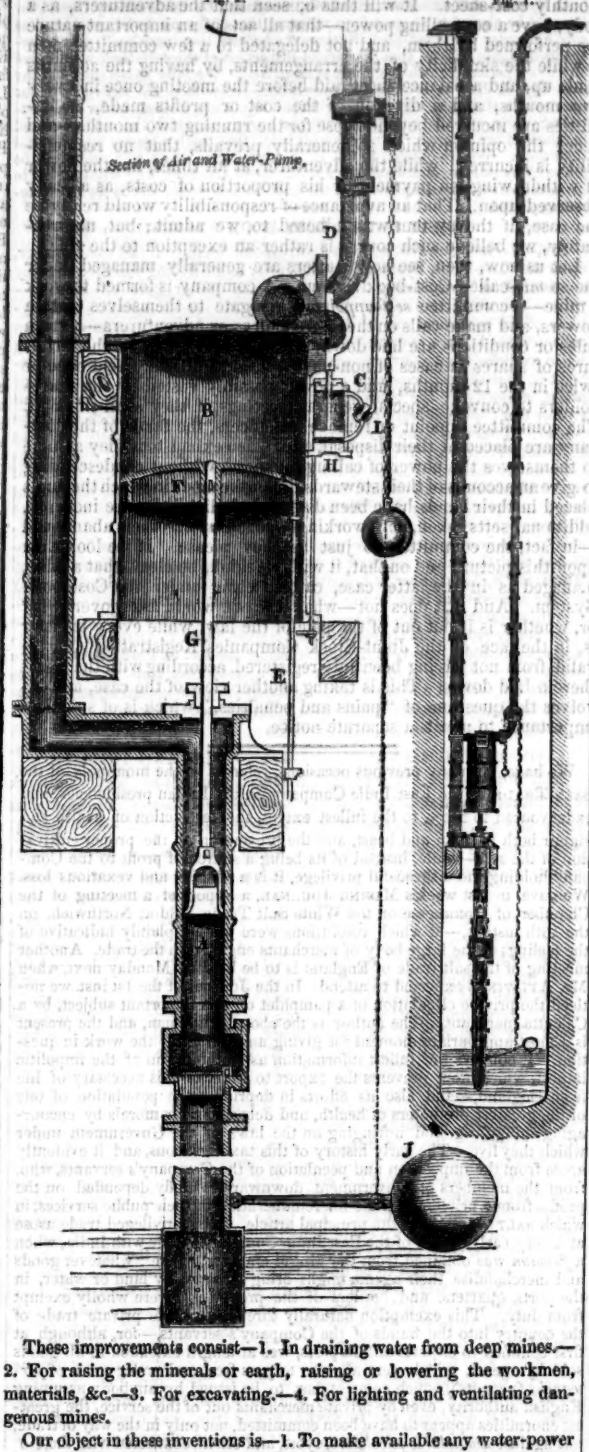
The Minister of Marine has issued a new batch of advertisements of contracts, to be received for supplying large quantities of coal, iron, coke, &c., at the different dockyards, for the Royal navy. It may, I presume, be taken for granted, that such of your readers as are interested in the coal and iron trades, take care to make themselves acquainted with the dates, and the conditions on which these contracts are to be taken. It is nevertheless a pity, that the Minister of Marine does not cause advertisements of such things to be inserted in the London newspapers,—for they would enable a greater number of coalowners to compete for the contracts,—and such competition would not only be acceptable to the British coalowner, but would certainly enable the marine department to effect considerable economy.

At their usual meeting, held at Liege, on the 19th instant, the ironmasters of Belgium determined that the prices of iron, for the ensuing month, should be fixed as follows:—Cast iron from wood, entre Sambre et Meuse, 20 fr. per 100 kilogrammes, taken at the furnace; ditto 18 fr. of Meuse, ditto. An advance of 5 fr. the 1000 lbs. was determined upon for *fers fendus au coke*; *fers forts* being fixed at 140 fr. the 1000 kilogrammes; *metis*, 130 fr. ditto; *tendres*, 120 ditto. A further advance is considered certain for next month.—*Paris, August 26.*

Substitute for Gunpowder—Valuable Discovery.—The attention of the scientific world has been drawn to the discovery, by Professor Schönbein, of an explosive compound, which appears to possess many advantages over gunpowder. A cotton is prepared by a process not yet divulged—but which is, in all probability, one that depends on the formation of a nitrogen compound. This cotton possesses many remarkable properties. On the application of a spark, the solid mass is at once converted to a gaseous state; and a scientific gentleman, who has witnessed some experiments in the laboratory of Professor Schönbein, informs us that, whereas an equal weight of gunpowder, when exploded, filled the apartment with smoke, the cotton exploded without producing any—leaving only a few atoms of carbonaceous matter behind. Common balls and shells have been projected by this prepared cotton, and it is stated to have the projectile force of gunpowder. An interesting experiment was recently tried on the walls of an old castle. It had been calculated, that from three to four pounds of gunpowder would be required to destroy it—and a hole, capable of holding that quantity, was prepared. Professor Schönbein being desirous of testing the explosive force of his new preparation, placed four ounces of it in the hole; which, when fired, blew the massy walls to pieces. Another valuable property of this cotton is, that it is not injured by wet; as it appears that, after being dried, it has lost nothing of its power. It, of course, remains to be seen if it is, in all respects, equal to gunpowder; but, under many circumstances, it must prove of great value. It is expected that Professor Schönbein will attend the meeting of the British Association, at Southampton; when, no doubt, we shall hear more of this extraordinary discovery.

French Coal Mines.—France is the third in rank as regards the production of coal—England and Belgium being the first and second. The production of England annually is 23,500,000 tons; of Belgium 4,500,000; of France, 3,783,000; and of the Zollverein, 3,000,000 tons. France contains 425 coal mines, on a surface of about 450,000 hectares; of these 173 are not worked. These mines employed in 1844, nearly 30,000 labourers. The amount of coal raised being insufficient for the consumption of the kingdom, about 1,500,000 tons are imported from England and Belgium. The number of steam-engines of all sorts employed in France in 1844 was 4319 of 62,950 horse-power, about $\frac{1}{7}$th of the force employed in England. The quantity of iron consumed in the same year, was in France 480,000 tons, four times that used in Belgium, which was 120,000 tons but only one-third of the English consumption, which was 1,200,000 tons; the amount consumed by the Zollverein in 1844 being 300,000 tons.

CLARKE & VARLEY'S IMPROVEMENTS IN WORKING MINES.



These improvements consist—1. In draining water from deep mines.—2. For raising the minerals or earth, raising or lowering the workmen, materials, &c.—3. For excavating.—4. For lighting and ventilating dangerous mines.

Our object in these inventions is—1. To make available any water-power that may be near (but not at present applicable with the present system).—2. To employ the power of an engine to any number of shafts—thereby obviating the necessity of an engine to each shaft.—3. For concentrating all the power into a particular part, if it should be needed, for the more speedy unwatering of any shaft, or for any other purpose.—4. For avoiding the necessity of working vertical shafts—thereby being able to follow the natural inclination of the metallic vein, without excavating more earth than is required for that purpose.—5. For raising minerals, workmen, &c., from deep mines, without employing chains, ropes, &c.—6. For employing power to work machines to break up the earth, drive wedges between the strata of stones, rocks (particularly adapted to coal mines), to facilitate their more easy excavation.—7. For a perfect safety lamp, or danger indicator, for coal mines, or other dangerous situations.—8. For ventilating the mines the same time the other operations are going on, and with the same machinery.

Our system for carrying the above plans into effect is by the following arrangement:—We employ the system of pneumatic exhaustion as our means of communicating power—being convinced this system will, eventually, supersede all others. Hitherto, the cause of failure has been imperfect workmanship, bad arrangements for producing exhaustion, and bad arrangements for applying the power to the work to be done; but we have as much improved on those imperfect experiments as the steam-engine has been improved since Watt first made his experiments; and any argument now urged against the application of exhaustion, as a means of communicating power, is no more valid than it would have been in the days of Watt, against the steam-engine. But the time is fast arriving when some other system must be adopted in deep mines, different from the present mode. In raising materials from a deep mine, by means of a chain or rope, at a certain depth, the weight of the chain or rope would break itself: the weight of the chain suspended from the top of some of the deepest mines at the present time is 10 tons.

The accompanying diagrams exhibit one of our plans for draining mines. A common lifting pump is placed within 20 ft. of the bottom of the shaft: a cylinder is fixed in a vertical position over the said pump; this cylinder is open at the bottom, and closed at the top: a piston working in this cylinder is firmly secured to the top of the pump rod, working up and down with it: attached to the top of the cylinder is a connecting pipe, leading away to the exhausting power: a slide valve on the upper side of the cylinder opens a communication either to the atmosphere, or with the exhausting pipe. The mode of operation is as follows:—We will suppose the piston, with the pump bucket, is at the bottom of the stroke—the slide valve is then moved in that position to open a communication from the cylinder to the exhausting pipe—the air in the cylinder is then withdrawn by the exhausting power—consequently, the pressure of the atmosphere acting below the piston forces it up, with a force due to the exhaustion, raising, at the same time, the column of water above the pump bucket; the valve is then reversed, admitting the atmosphere above the piston, allowing the piston and pump bucket to fall by its own gravity to the bottom of the stroke, ready for the next operation. It is clear from this description, that water may be raised to any height, by enlarging the area of the air cylinder. Supposing the air cylinder to be 3 ft. in diameter, working at an exhaustion of 10 lbs. to the inch, we have then a pressure of 10,180 lbs.—consequently, this cylinder would lift a column of water 10,180 lbs. in weight (deducting friction); but, if we increase the size of the cylinder to 4½ ft. diameter, the same column of water would be raised to double the height, and so on in any other proportion. It is also evident in this system, that the motive power may be any distance away from the pump—thus making water-power available, that is on the present system useless for this purpose. Also, one steam-engine or other motive-power may work any number of pumps (if of sufficient power) a distance away, and where any system of rods would be quite inapplicable; also, the shaft, instead of being vertical, as at present, may be at any angle or inclination to follow the metallic vein—it being much easier to work on the course of the lode than in any other direction: thus saving, in some instances, a vast expense in excavation or earthwork. In the present system, the great weight (exceeding 300 tons) of the pump rods in the deep mines, prevent their working in any other than a vertical position.

Fig. 1 represents a sectional elevation of pump and cylinder, with its valve gear.

Fig. 2 is a section of a shaft, with the pump work complete. A, the water pump; B, the air cylinder; D, the connecting pipe; C, the slide valve; H, a small cylinder to work the slide valve by the exhaustion; I, a small four-way cock, to allow the exhaustion to act above or below the piston in the cylinder H. The piston, F, of the large cylinder is attached direct to the pump bucket, A, by the rod, G, the bottom of the cylinder, B, being open; E is a small rod fastened at its upper end to the piston, F, and partakes of its motion. At the top and bottom of this rod are two tappits, which at the top and bottom of each stroke shifts the position of the four-way cock I—the object of this small cylinder is, that a small force will turn the cock I, and then the exhaustion shifts the slide C with quickness and certainty—the power to move the slide increasing in the same proportion as the friction on the slide valve (caused by the pressure of the air on the face of the slide). J is a float, which rises and falls with the water; this float opens and closes a throttle valve in the pipe, D, when the water accumulates in the mine, then it opens the valve, and the pump commences working; but as soon as the water gets below a certain level, the float descends and closes the throttle valve, and the pump ceases working until a further accumulation of water. The exhausting pipe, D, to be made of galvanised sheet iron. The pneumatic cylinder, B, may be exceedingly thin, as the pressure will be external, and will never exceed 12 or 13 lbs. on the inch. Other arrangements of the pneumatic cylinder, B, may be adopted to suit particular circumstances, such as a plunger substituted for the pump bucket. The cylinder, B, may be also made double acting, or two work in combination. In deep mines there will be a series of pumps at different levels, as at present.—Clarke & Varley: *August* 26.

ON WORKING THE IRON ORES OF MALAGA, COMPARED WITH THOSE OF ALGERIA.

In the *Annals des Mines* (last number) there is an interesting paper, by M. Pernollet, on the iron forges of Malaga, in Spain, and from which we now give some extracts:—After stating his belief that the mineral resources of Spain are but little known in England, although there are few countries, either in Europe or America, which so abound in rich ores of every description; and that enterprise and capital only are wanting to render her one of the richest mining kingdoms in the Old World; he proceeds to say, that machinery is working wonders, and that Spain is taking every advantage she can by adopting it, and encouraging the formation of railways. There exists (says he) at Malaga two important iron foundries—one a large establishment, worthy of its name, called *Constancia y Labor* (constancy and labour), and the other *La Ferreria y Fundicion del Angel*.—They work the iron ores of Marbella—the Ferreria principally on the English plan; Constancia possesses some furnaces, worked by Welsh anthracite, which produces an iron of very good quality, and meets with ready sale; it has three blast-furnaces, a large English forge, a moulding foundry—one for making fancy iron-work—and numerous workshops; they are also preparing to add the manufacturing of cast-steel and tinned iron. Senor Heredia, the founder of this establishment, is having a large cotton factory constructed close to the furnaces; and he possesses, in the vicinity, some extensive soap manufactories, in which he employs cast-iron boilers and cooling-pans—in which the operation is effected in one-third less time than by the bricked-up coppers of Marseilles, the ore and oxide of iron from Marbella is of a very superior quality, rendering 70 per cent. of pure iron. A dark-coloured hydrous oxide, obtained from a short distance west of Malaga, is also used, which is almost entirely free from earthy matters, and yields 60 per cent., but does not yield such good iron as the former. The anthracite coal of Wales is the only fuel suitable for these ores; coke and charcoal have been tried separate and mixed in different proportions, but have always proved more difficult than by anthracite alone. The anthracite is used in lumps, and the small carefully sifted away as injurious to the metal; the furnaces are 40 ft. high, and are blown by air heating up to the melting point of lead, the gases escaping from the top, works the blast-engine; the pressure of the blast is about 3lbs. per square inch through several tubes 4 in. in diameter. This system has proved highly favourable for working with anthracite; the pipes and plates are very simple, and work well; they are formed by running melted iron round thin tubes of proper diameter, twisted into a spiral coil, which plan was invented in England. These furnaces produce from 8 to 10 tons of cast metal within the 24 hours—at present they produce cast metal only, and the proportion of fuel is 150 lbs. of anthracite to 100 lbs. of iron produced. The furnaces of Alais, in France, which are heated by coke blown by hot air, produces from 10 to 12 tons of metal within the 24 hours, with less consumption of fuel. The furnace of Cecina, in Tuscany, is blown by cold air, and uses much less fuel than either of the above. The furnaces of the Island of Elba, which are 25 ft. high, yield 16 tons of metal in 24 hours, with a small consumption of fuel. It is hardly possible to make a comparison between the working of the anthracite at Constancia y Labor, and at Yniscedwin, as the former only produces cast iron. The puddled iron of Malaga is very fine, and meets with a ready sale; the average price that the forges at Malaga can deliver the best flattened iron, is 1*l.* 9s. 2d. per 2 cwts., and there is no reason why the coast of Algeria should not be put in *juxta position*, having the same means of importing anthracite for smelting her iron ores, which, as we have before stated, yield 56 per cent.

It is evident that, for the manufacture of iron in Algeria, they must employ anthracite at the rate of 1*l.* 12s. 6d., and coal at 1*l.* 4s. 6d. The expense of coke would be about 2*l.* 16s. 8d.; and charcoal, although less of it would be consumed than anthracite, probably would not be dearer than coke. The second preparation would allow the employ of coke at 16s. 8d., and coal at 12s. 6d.—therefore, each ton of iron would require 4800 lbs. of ore, yielding 56 per cent. of cast metal, the weight of which would be 2700 lbs. The consumption of fuel in the high furnace would be about 2 tons of coke, or perhaps 3600 lbs. only of anthracite; but the complete treatment in Algeria cannot become economical unless the expense of transforming the cast metal into iron be reduced to 12s. 6d. As the richest ores are not always those that yield the best iron, therefore it would be advisable not to melt on the spot those of 56 to 70 per cent., but export them to Grand' Combe, in France. The best iron of Sweden is that of Danemora, made from ore yielding 56 per cent. Should foreign ores be imported into France, the magnetic ores of Marbella should have the preference, in consequence of its abundance, purity, and richness, and its proximity to the sea, as it does not cost more than 1s. 1½d. per ton; it would, however, cost 1*l.* 12s. 6d. to 1*l.* 16s. 8d. per ton, delivered in the basin of the Grand' Combe. Should there be no scarcity of ore in Algeria, they could produce, by means of foreign mineral fuel, iron, at the rate of 14*l.* 8s. 4d.; and it would be more economical to dress on the spot all ore yielding less than 56 per cent. of metal than to export it; and for ores of this low quality the use of Welsh anthracite coal, in consequence of its cheapness, would be the only mineral suitable for blasting the high furnaces established on the coast of Africa. The quality and mineralogical nature of iron ores has the greatest influence in the quality of the production of metal obtained from it. To be convinced of this fact it is only necessary to consider what is passing in Sweden—that country manufactures from the oxides her best iron of various qualities, the prices of which vary greatly. It might be considered, that the working of them has some influence on the different qualities, but it is not the case—as at Danemora, where are the furnaces which produce the best marks, the superiority of the iron belongs to those proprietors of large beds of ore, who have sufficient quantity to furnish exclusively their furnaces—whilst the factories, which are obliged to add to the ore of Danemora, ores coming from other beds of the same mineralogical nature, but different in nature, or the quantity of extraneous matter with which they are mixed, produces the inferior qualities of iron.

Sulphur Ore.—The *James* arrived at the port of Liverpool from Gergenti (Sicily), with an entire cargo, consisting of 460 tons of sulphur ore. The importation of sulphur, or brimstone, from that quarter, takes place, as is well known, in very considerable quantities; but this importation possesses, we believe, if not an entire, at least a considerable degree of novelty, and as a similar arrival has not come under our notice, we deem it worthy of a particular mention.

The Valentia slate quarries are now worked by the aid of a 30-horse power steam-boiler.

The lead ore miners of Alston Moor, Allendale, and Weardale, have engaged the services of Mr. T. Bowman, of Boal Cleugh, as their oculist, at the rate of 6d. per man per annum.

Original Correspondence.

MONMOUTHSHIRE AND GLAMORGANSHIRE BANKING COMPANY AND VICTORIA IRON-WORKS.

SIR,—Your widely circulated paper has been the means of exposing and correcting many abuses in certain joint-stock companies; and in no case more beneficially for the interests of the shareholders than in that of the Monmouthshire and Glamorganshire Banking Company. Your last Number contains a letter from "A Shareholder," seeking further information on the subject of the bank; and, with the view of supplying a little, I would in the first place observe that, in the Chancery suit, "Fraser *v.* Hall," no further steps have been taken since the report, contained in your Journal last autumn—in short, the bank and the baronet have brought each other to a stand still; neither being declared the victor, but both the worse from the damaging effects of the contest.

The works are still being carried on; and the produce of iron from the two furnaces in blast does not exceed 95 tons weekly; make for the week, ending on Saturday last, being under 90 tons, and all white iron, except one sow of mottled. The average make for the 16 months the furnaces have been in blast, gives barely an average of 45 tons each weekly. I am credibly informed that the average make at the four furnaces in blast at the adjoining works, for some time past, exceeds 140 tons weekly. Had the letter of last week not appeared, it was my intention to have addressed you on a subject of vital importance, connected with the management of Victoria Works, in which may be recognised a most reckless disregard for the safety of the lives of a number of men. The cause of so small a make of iron arises from the want of material—about one-seventh of that used being raised from a pit 230 yards deep; the mines being the lowest workable in the South Wales basin, and immediately underlaying a very fine vein of coal, known as the "old coal." (See *Geological Sections*, just published.) These mines are only accessible by a single pit, worked by a steam-engine, and the ventilation carried on by means of a revolving fan, worked by hand. No bratticing of wood and timber of the shaft has been adopted, nor any other means for the circulation of air, other than a drift driven in the "old coal," and a connection, by means of a small pit therefrom, with the mines below. The "old coal" in this locality is well known to contain a large amount of fire damp; and, from the contiguity of the works beneath, cracks unavoidably take place—the distance not exceeding 6 ft. or 7 ft., through which the gas descends.

The mineral agent at Victoria is one of the oldest and most intelligent of his class in South Wales, having been 40 years at the Ebbw Vale Works, and cannot fail having a perfect knowledge of all the minutiæ appertaining to mining; and I am informed, on undoubted authority, that so impressed is he with the great danger of pursuing the workings on the present system, that he has felt it his duty to represent the consequences to be apprehended therefrom to the chief manager, Mr. Beaumont, jun., *urging a suspension of that portion of the workings until another pit has been sunk*, when the air-ways could be perfected, and the gases cleared; and although this has been done several times, the orders are to KEEP ON WORKING. The contractor at this, although netting a large sum monthly, has given notice to leave, from no other cause but the imminent danger of being swallowed up in fire. For some weeks past arrangements have been made that, in the *event of an explosion* (mark that!), the water being pumped up at the "Three-quarter" Coal-pit (which pit has a communication with the deep pit referred to, at 130 yards from the bottom of the latter), should be instantly turned down the said pit, as the only chance of relief to the unfortunate men working there. Can it be doubted that, in the event of an explosion, every living thing within those workings must perish. And now, sir, after this public warning of the consequences to be expected from pursuing the present system of working, I dismiss this part of the subject.

A few words on the prospects of the banking company in carrying on what your correspondent is pleased to call (and I must say, not inaptly made), "these ill-fated works." I have already stated, that one-seventh of the iron is produced from the "Bottom Mines," yielding, by analysis, less than 32 per cent. (see Mr. Mushet's *Report on Victoria Works*, p. 22, 23, and 24); the remainder (six-sevenths) being from Soap Vein Mine, yielding 10 per cent. (p. 13 of same report); and Black Pins yielding 22·0 per cent. (same page.) The cost of one ton of pig-iron will stand nearly as follows:—

1 ton, Bottom Mines—say, 33 per cent. of iron, at 15s.	£0	15	0
3 tons, Black Pin Mines—say, 22 ditto, at 15s.	2	5	0
3½ tons coal (see Mr. Mushet's report), at 4s. 6d.	0	14	7½
1½ ton limestone, at 4s.	0	5	0
Labour	0	15	0
Royalty on 8 tons materials used, at 7d.	0	4	8
Management—Mr. Beaumont, 400*l.*; Mr. Morgan, 300*l.*; Mr. Adams, 250*l.*; Mr. Saunders and clerk, 250*l.*—upon, say, 100 tons per week	0	4	7
Rents, taxes, &c.	0	3	0
Delivery on shipboard, at Newport	0	5	6
Total	£5	12	4½

—Allowing nothing for interest of capital, additional outlay required to extend mining operations, cost of Chancery suits, affidavit swearing, &c.

NOTE.—Supposing equal proportions of Soap Vein and Black Pins were used, the mean produce would be 16 per cent. only of iron, and, consequently, the cost would be 11s. 3d. more, or 6*l.* 3s. 7d. per ton. If your Cardiff correspondent will favour me with his name in confidence, I shall have pleasure in giving him *much* further information; but cannot venture to do so through the channel he seeks it—namely, your columns—knowing, as I do, that everthing relating to these "ill-fated works," reported therein, is carefully scrutinised by London solicitors, for reasons and purposes too manifest; and being myself no lawyer, I desire to be cautious. My name and address you have.—A LOOKER ON: *Cardiff, Aug.* 26.

WHAT IS THE COST-BOOK SYSTEM?

SIR,—Nothing could be more erroneous, or calculated to mislead your readers, than the remarks which have appeared in your paper of this day, under the head of "What is the Cost-book System?" and which purports to be an exposition of the Cost-book System. Your correspondent must be either very much mistaken, or entirely ignorant of the principles upon which cost-book mining companies are conducted; and, as he requests to be corrected upon any "wrong point," I beg to offer the following remarks. The first propositions of your correspondent are perfectly correct, but the third contains a manifest and egregious error. It would appear, from your correspondent's remarks, that there must be shareholders, and that they must all sign the cost-book; but so far from this being necessary, one or two individuals can form a company under the Cost-book System, and this is generally the case; the next step is to form a code of rules or laws, which embody all those mentioned by your correspondent, and other necessary provisions; these laws or rules are entered in the "cost and transfer book," and every person, upon becoming a shareholder, signs a deed of transfer, accepting a certain number of shares, and by which instrument he consents to abide by the rules and regulations established, as aforesaid, for the government of the company. The deed of transfer, when executed, is entered in the cost and transfer book, and thus it is, that every person signing a deed of transfer, virtually signs the cost and transfer book, and, therefore, subjects himself to all the rules and regulations (*whatever* they may be) which are written in the cost and transfer book.

It is ignorance of these facts which causes many errors, and with which your correspondent seems to be totally unacquainted. You will at once perceive, that it is the rules and regulations of the company which immediately affect all those signing transfers. The Cost-book System is a very simple one; but much roguery may be committed under its name. I would, therefore, advise all persons to understand fully and clearly the rules and regulations of any company, in which they may intend to become shareholders. A careful inspection of the cost book would give any one a perfect knowledge of the system: it would also prevent much complaining and foolish cavilling upon the part of those who *will embark their money* in mining companies, without making the slightest effort to learn the extent of the liability they incur.—I. E.: *Aug.* 27.

[In giving insertion to the letter of our correspondent, one or two remarks appear to be apposite. In the first place, at rule 8, our correspondent, whose remarks the preceding letter is intended to correct, does not say that all the shareholders must *sign* the cost-book; but he contends, and we think very fairly, that *all* the shares should have been taken antecedent to any active steps being taken for working the mine—otherwise the party taking 1-256th share, or part, might find himself unexpectedly liable for five times the amount, was one-fifth of the capital only subscribed. This, we feel satisfied "I. E." will admit. We do not pretend to offer any opinions on "What is the Cost-book System," or what is not, in this place, having treated on the subject generally in another column. "I. E." says, that by the deed of transfer the purchaser binds himself to "all the rules and regulations (*whatever* they may be) which are written in the cost and transfer book." We agree with our correspondent in one sense, that the purchaser does subject himself to the rules and regulations previously adopted; but, with all due deference, we submit that those rules and regulations must be such as are ordinarily observed under the Cost-book System, and which are, moreover, recognised by the Stannary Court; for it would be absurd to suppose for a moment, that they are to be considered as coming under the Cost-book System, "*whatever* they may be." Our correspondent again tells us, that "a careful inspection of the cost-book would give any one a perfect knowledge of the system, &c." We fully admit this; but the difficulty is, how to acquire the knowledge—the purser will not reply to the queries of a stranger, and as the principal mines are worked under the Cost-book System, and the cost-book with the purser, in which the said rules and regulations are entered, we need hardly add, that such a course is easier said than done. We are obliged to "I. E." for his letter, which will, doubtless, be followed by others; and we doubt not but there are many who will be glad to be initiated into the simplicities of the Cost-book System, and to see its mysteries exploded.]

WHAT IS THE COST-BOOK SYSTEM?

SIR,—I observe an article, from a correspondent, in your last week's paper, upon the Cost-Book System, in which, after enumerating what is generally considered as constituting that system, the writer goes on to say:—"Thus you will perceive that no business beyond the examination and payment of the cost-sheet can be delegated to a committee." Again, "when calls are made by a committee, such calls cannot be enforced." I beg leave to differ from your correspondent. The grand principle of the cost-book is, that the *majority shall govern*; and I apprehend it is in the power of the majority of the shareholders in any mining company, to appoint two or three of their body to act as a committee, and as a check upon the purser. That this latter *is requisite*, I would only refer to the late instances of Wheal Trewavas, Wheal Providence, and Chypraze. Had these mines been under the surveillance of London committees, the ruinous results of their mismanagement would have been avoided. Your correspondent may, however, argue that the necessity for a committee does not make them any the more legal. To this, I would say, at Tresavean and the Consols, the largest mines in Cornwall, the office of purser has been abolished, and the mines are carried on under the management of committees. The truth is, Mr. Editor, it is hard to define what the "cost-book" really is; it has never (at least to my knowledge) been defined in law—custom, therefore, establishes the general precedent; but, because it has sometimes been the "custom" for pursers to be "rogues," and to victimise the London shareholders, surely it is not violating an Act of Parliament to take measures to abolish that "custom!" I uphold that London committees are not only useful and necessary, but the greatest safeguard an out-adventurer can have, when he enters upon mining speculations. ARGUS.

Cornhill, August 24.

ON MINING MANAGEMENT—TUTWORK AND TRIBUTE.

MR. BUDGE—Sir: When you commenced your letters about "Tutwork and Tribute," you stated something about the whole faction of mine agents being like a nest of hornets aroused against you, and this you might expect, from the wholesale manner in which you attacked them; but, no doubt, there were many, like ourselves, too busy to spare time to answer you. We now beg leave to tell you, that our pitmen and sumpmen have finished sending up 133 fms. of pitwork, consisting of plunger lifts, averaging 16-inch bore from one shaft, and 134 fms. of pitwork of equal dimensions from another shaft, with 150 fms. of flat rods from the 174 fm. level, and all appurtenances, such as rolls, stands, ladders, angle bobs, and shaft bobs; and the whole of this has been accomplished, beginning at the 248 fm. level, and clearing away before the water (which rose 30 fms. per week), by 27 men in 20 days, *on tutwork*. Previous to letting those bargains, we stripped 70 fms. of engine-shaft on the system you so handsomely recommend (ourselves the gangers relieving underground); and we beg to inform you that the result is 33 per cent. in favour of tutwork, as shown by the books; and in this account, we perceive, there is nothing allowed for the candles which were used on owners' account, and which we then found to exceed the tutworkman's usual allowance. Nor do we, sir, think this an exaggerated statement of the difference between daywork and tutwork, but somewhere about the mark. But, sir, when you recommended the day-work system, did you think it something new? If so, you must be very young in mining affairs. The thing was tried in our fathers' days in two rich mines, which we could name; and it is amusing to hear the old men say, how they used to deceive the captain during the night core, although he was obliged to be down with them; but when those mines became poor, they were obliged to return to the tribute system, and one of them was worked on tribute long after the adventurers had ceased to venture one penny in it. We were once employed in a mine, where part of the labourers, being agriculturalists, refused to work on any other but the day-work system, and we then had to settle the frequently-arising disputes between the gangers and workmen, of whom there were four employed, to superintend about 70 persons; and we know, from three years' experience, that although the tutworkmen and tributers earned a third part more than the day-work men, yet they worked cheaper, and spent the ground for less money per fathom than the day-work men; and we beg to add, that we have at present 13 gangers (if they may be so called) in our tin dressing department, superintending the labour of about 450 persons, and that both they and ourselves are agreed, that whenever the work is of such a nature as to bear a task, or a bargain, it is better to set it, and they only wonder we do not (as we do in some cases) set to them also—for, say they, "The boys know when we are on our own account." But, sir, are you not aware, that mining is speculation, and that it becomes every one engaged therein to be interested in its success, and the better the mine the better for all hands; and do we not do well to make the labourers' interest correspond with our own. By the system you recommend, we must be eyes, understanding, and purse for the whole; but, by the tribute system, every one shares in the success, or otherwise, of the adventure, and we find that some men will rather go in search of ore, where there is any reasonable chance of finding it on tribute, than be employed for regular wages; and who, that knows anything of mining, would wish to destroy this noble and enterprising spirit, by which so many poor mines are kept open, and so many good ones have been discovered. Surely, sir, your experience of mining affairs must be confined to a narrow circle indeed. Perhaps you have to do with mines, in which the adventurers, from being ignorant of mining, are determined to have "regular gettings," systematical working, no stints, &c.; there was a time when we heard of the *scantle* for the first time, and were told that, in such a mine, if a person got *more* than 45s. in one month, he must get *less* the next, and that the agents, for the sake of *appearances*, were obliged to keep the men doing nothing from the time they had driven their "stint" until the end of the month, and that some adventurers kept a ledger of men's gettings, to find out the agent's favourites; but, thanks to Providence, no such things enter into our accounts, and if you wish to vent your spleen against the system of "regular gettings" and "short stints," you have our cordial wishes, and, if need be, assistance; for we could on that score tell a tale of days gone by. But, sir, you said in one of your letters, that agents do not know what is a "fair price" for work to be done underground, we advise you to attend some large survey, and you will find that the men know whether they have a fair price or not; and if we are so much degenerated, let us have another turn on the stopes, and then, if you like to be our comrade, we shall have no objections (if it be possible) to initiate you in the details of something, which you seem to know little about.—THE AGENTS OF WHEAL VOR.

Helston, August 24.

ON MINE SURVEYING, WITH A GOOD PRACTICAL QUESTION.

SIR,—I am sorry that "A Surveyor" should be so ignorant of the qualities of the mining agent; he professes to have surveyed mines for years, so I should think he must have seen some of their work, and have found that those ignorant captains, as Mr. B. calls them, had often holed their ground *im*properly and with *mal effet*. For several years I have been surveying in mines, and some of the most glaring mistakes I have seen have been made by parties paid for surveying; and who does Mr. B. think they are? Coxcombs, sons of managers, *alias* sons of Dad, who can merely flourish at the drawing board, who know nothing of the art, and whose fathers cannot teach them; and if Mr. Surveyor will humble himself to confess, he will say that the communications between the shafts, winzes, and levels, are often *im*properly done; but who are the parties that have given the directions? Men, who do not know the meaning of the word trigonometry—whose excellence in holding the borer excuses them from holding the pen aright—men, who although they know nothing, as they should, of the dial or pen, are not ignorant of their strict calling, and who may well be excused of their blunders, when obliged to undertake things which really should not be imposed on them. I think I might name a mine agent, who was under the necessity of performing the duties of a midwife for more than one of his neighbours; now, he might as well undertake to set a broken limb—but these are not his work—and for equal reason an operation o such consequence and difficulty, as the one in question, should be mad the exclusive work of men in the every day practice; and who is there to contend, that the chances of error would not be less? The many errors to be pointed at lie, more or less, 100 fms. deep, and for this reason concealed from proprietors, because, by comuon consent, knowing each his own liability to error, brother agents cloak up the one the other's *bad job*—whereas a man, by daily practice qualified, would run great risk of losing his bread by a similar misfortune.

I conclude by a question to young diallers and diallers of the old school:—Suppose I take a dial of first-rate price and workmanship, which apparently has no defect, with a needle of perfect action; and after adjusting both levels, I take an underlay; but, being desirous of confirming my work, I redial my course—and at the same underlie, in placing the same dial at the same point, and after going into the same adjustments, and looking to the same mark below, I find there is a difference of result to the extent of 4 or 5 feet for an ordinary length of winze. Where am I to look for the cause of this error, premising that the needle each time maintained its true magnetic position, and each observation well made by the operator? This is an edifying question, involving no science, but goes to prove that dialling, as an art, is a greater affair than as a science.

Pool, Illogan, August 18. A MOLE.

TUTWORK AND TRIBUTE

SIR,—* * * I beg to call public attention to the fact, that the *sole* and *only* plea the writers in opposition to my statements have, or that they even attempt, is a declaration that their old comrades, the working miners, are a set of lazy, unprincipled, and dishonest men, who will not work without coercion or compulsion, although they may have fair and liberal wages offered to them! Now, a greater, scandalous, and more *unnatural* libel than this was never uttered; and yet those very men cry out and complain of being *insulted* and *abused* when the truth is revealed concerning them (the *notorious* truth), that they are unqualified for their situations—and I can appeal to the comparatively few and accomplished mining officers amongst us for a confirmation of this fact, and that they often blush for the ignorance of the men who have been unworthily placed in the same rank with themselves. Those writers say, that there are hundreds of fathoms of ground broken on *tribute*, which would not have been done under the *wages* system! Little do these admirable logicians think, that they never could bring forth a stronger case to shew that the workmen are better miners than the captains!—the thing is evident by their own acknowledgment. The *captains thought* the ground was not worth working—the *men knew* better, and undertook to drive on the lode, and succeeded, realised wages, and made discoveries!! But this argues not a jot against the wages' rule, but greatly in its favour; for we shall then have the full and undisguised benefit of the *miners' judgment*, as well as of his labour. Speak out, ye captains, and tell how the operations of a mine are retarded after every setting-day, by men giving up their pitches or bargains, or refusing the captains' unfair price, and the places lying idle, and after a time a pare of strange men taking them, who are unacquainted with the best methods of getting through the ground—for it is well known, Mr. Editor, that it takes men some time before they find out the best method of working any new ground, although they may be as good miners, or even better, than their predecessors. Observing that you have several letters on this subject *on the table*, announced for your next Journal, I break off now, without showing any more of the almost infinite evils of working mines by contract.—JOHN BUDGE: *Callington, August* 25.

MINE SURVEYING—THE CHALLENGE.

SIR,—I again reluctantly resume my pen, feeling my time badly bestowed in contending against one, who is so far *dishonourable* and *deceptive* as to publish my letter in part, under the title of a verbatim copy, taking care to leave out such portions as would go to weaken his cause, and publishing his *own* letters with as many alterations as it suited his purpose to make, which the enclosed original letters and correct copies will go to prove, and which you, Mr. Editor, will be pleased to do me the justice to insert in your valuable Journal of this week, that the true correspondence may appear. The mining public, who, it appears, are to be my judges, must at once perceive, that to solve Mr. Budge's boasted problem, would be to depart from my original proposition, which was *practical dialling*, and from that point I have in no degree deviated throughout my correspondence. I appeal to every man of common sense, whether to make and to carry out an actual survey is not a surer method of ascertaining a person's abilities for that important work, than in solving problems set down in a manner quite inconsistent with a direct course of dialling, as is the case with Mr. Budge's, published in your paper of last week; and as I am still solicitous of proving the matter in this way, how comes it to pass that that gentleman can make good his charge of my being defeated, or that he is my "*more than match*?" For *audacity and conceit* I am inclined to believe he never will find his match, for surely no other man living possesses so large a portion of either; but on the point of "Mine Surveying," I will not give in one inch, knowing, from past experience, that I can with perfect ease compete with Mr. Budge; and, therefore, again call upon him to meet me in this way. There is important work coming on in the neighbourhood, which will not take *half* a year to accomplish—unless, indeed, the operations be carried on on "*owners' account*." Let us, therefore, each choose a man as umpire; and let us be bound to pay any sum which might be required to rectify the error, should any be made in dialling. In conclusion, I beg to observe, that I might have answered Mr. Budge's problem with perfect facility; but did not consider it worth my while to bestow any time upon it: *to do* and not *to say* is my motto; I therefore leave unprofitable questions for those to whose feelings a life of inactivity and idleness is more consonant than to mine.—JOHN PRINCE: *Callington, August* 25.

[We have received, with the above, copies of several letters which have passed between Capt. Prince and Mr. Budge, but they are not of sufficient public importance to publish. We trust the challenge of one or other party will be accepted, and thus an end put to a discussion which, we are sorry to find, has assumed too personal a character to be of use, or interest, to our readers.]

MINE SURVEYING—ANSWER TO PROBLEM.

SIR,—Annexed you have my answer to Mr. Budge's problem, published in the *Mining Journal* of the 15th August:—Distance from back of south lode to pit shaft, 14 fms. 4ft. 5·640 in.; depth of shaft, 30 fms. 5 ft. 5·160 in.; and length of lode from surface to bottom of shaft, 34 fms. 1 ft. 5 in.

Callington, August 20. H. W. PALMER.

MINE SURVEYING—ANSWER TO PROBLEM.

SIR,—I herewith furnish you with the solution to Mr. Budge's problem, inserted in the *Mining Journal* of Saturday, the 15th August:—From the south lode, 14 fms. 3 ft. 11·138112 in.; depth of shaft, 30 fms. 4 ft. 4·146360 in.

Clerkenwell, August 20. W. H. S.

USE OF PEAT IN THE MANUFACTURE OF IRON.

SIR,—Will you please to insert this, as some of your correspondents may favour me with giving an answer to the following questions:—Has iron ore ever been run from peat, instead of coal or charcoal? Is it necessary to char the peat? What quantity of peat would be necessary to each ton of iron ore, either in the natural state, or charred? Where such work has, or is, going on? Whether bog iron ore could be reduced without a mixture of ore of a poor quality—the bog iron ore yields generally 60 per cent. produce?—R. S.: *King-street, August* 22.

ADULTERATION OF FLOUR.

SIR,—In reference to the question on the adulteration of flour, under the signature "A Mechanic," in your last Number, I may state that the general adulterations of wheaten flour are *chalk, gypsum, bone ash, Cornish clay*, and potatoes—the latter a very serious affair, from the prevalent disease—*alum* is added, not to increase the volume, but to impart *whiteness*, &c., as is supposed, to bread, and make inferior qualities—nay, worthless and unwholesome flour—wear the semblance, when baked, of that of the best kind of wheaten flour. Muriatic acid is *better* adapted than sulphuric acid, for the detection of chalk, or any carbonate of lime, which it does by exciting effervescence, though any acid will do. It seems clear that the specimen referred to did *not* contain chalk or "whiting." Sulphuric acid would have no effect on *gypsum*. In order to detect gypsum, mix a portion of the suspected flour with *distilled* water, pass through blotting paper; *nitrate of baryta* will detect *sulphuric acid*, in a sulphate, and *oxalate of ammonia* be the test for *lime*. After all the organic matter is burnt away at a red heat, wheaten flour evolves 44·5 per cent. of the residual ashes, of *phosphate of lime*—so that this latter method might prove deceptive, except to those conversant with chemical analysis. The "red slimy paste" superinduced by the action of sulphuric acid, no doubt, proceeded from the *gluten*, &c., of the specimen—and, indeed, might result from the

presence of potatoes, or any vegetable substance, containing carbon; concentrated sulphuric acid would, in fact, produce a similar effect on the *best* wheaten flour, and, *as far as it goes*, is no evidence of adulteration. There is little doubt but the flour was adulterated, but it would require chemical analysis to determine the *nature* of the ingredients mixed with the flour.

Portland-place, Hull, August 24. J. MURRAY.

THE POTATOE BLIGHT.

SIR,—My friend, Sir James Murray, M.D., of Dublin, having sent me the inclosed copy of his letter to the *Brighton Gazette*, I have only to remark that I think the suggestion is important, and it seems to me the only alternative left us to try, in reference to the mysterious disease which threatens the speedy extinction of that invaluable esculent, the potatoe. If I am able to obtain seed potatoes, which, however, seems now entirely problematical, I shall certainly carry the proposition into practice, in a modified form—viz.: the principle of the paragrêle; my crop of potatoes this year has fallen almost an entire sacrifice to the potatoe "blight." After the best attention I could bestow on the subject, I have come to the conclusion, that the disease is attributable to atmospheric causes—in other words, that it is *epidemic*. In the first edition of my *Treatise on Atmospherical Electricity* (1829), I proposed the erection of paragrêles, as a shield against the *blight* in hop grounds, which I believe attributable to a morbid state of the atmosphere, connected with its electric condition. This conclusion, and the plan proposed for a remedy, was attacked in the *Times* newspaper, by J. Rennie, dated 26th February, 1830, to which I duly replied, and my principles were still further eliminated in the second edition of that work, published in June following. J. MURRAY.

Portland-place, Hull, August 24.

SIR,—During a long journey to this town, I lament to observe that the potatoe disease prevails far and wide.

Having made many experiments upon the *immediate cause* of this blast, and, also, having proposed plans for mitigating the stroke, I am sorry to say my trials did not meet with the encouragement which I had expected in country places where the malady was most extensive. It is true, that theory is seldom listened to during an alarm; and I also confess, that the practical results were necessarily too limited at first, to make much impression during a period of dismay.

I will here merely glance at a few *outlines* of my experiments. If thought worthy of being followed up more at large, this is the time, and here is the country, to bring their deductions to the test.

Having long since (in 1839) pointed out the then unequal condition of the electric fluid over a large belt of our globe, and having shewn the untoward effects of disturbed galvanic action upon the solids and fluids of delicate human beings, and well knowing (as every person has observed) the severe injuries resulting from p ssages of galvanism through plants, I was led to pass and withdraw electricity from living vegetables artificially, to compare the results.

Of all other plants, the potatoe suffers most in the mechanical or polar relations of its molecules, by the transmission or abstraction of electric influence, and it is also speedily altered in the chemical condition of its solids and fluids. When a cloud or an excess of negative or positive electricity excites a current of its opposite element through the soft and watery stem or tuber, the texture itself, as well as the chemical atoms of the plants, is altered, and the shock is proportioned to the degree of electric disturbance excited.

From many data, too numerous to mention, it seems that during late years some terrestial and atmospheric changes have caused very untoward disproportion between the natural quantity of electric (matter) issuing in currents and counter currents from the air to the earth, and the contrary. The potatoe stem, made up of cells and water, with pointed leaves, and succulent tubers, is most amendable to the conduction and shocks of electricity. Corn defends its stalks by a varnish of non-conducting glass, or siliceous enamel, other domestic vegetables are by no means such ready electrical conductors as the stems of the potatoe.

Many other points might be urged which would more easily account for the *partial, sudden*, and *curious progress of the blight*, from the above, rather than from any other cause.

Having often tried the effects of artificial disturbance of electric (fluid) on the potatoe, I covered some stems with bottles, such as are used to carry vitril; and I can safely affirm, that all the stalks *so insulated* escaped, whilst others were struck black, along direct lines of the same field.

But as this remedy (if found to be a remedy) is not applicable on a large scale, I tried the plan which I carried into effect in the rice grounds of Italy—viz.: the use of horizontal electric rods. These were small copper wires, fastened at one end of a ridge to an iron rod inserted deep into the moist ground. Similar stakes were inserted at certain spaces, till at last the copper wire attached to these iron stakes, reached the other end of the ridge. These iron rods or stakes stood about 2 ft. above the surface of the ridge, or 8 or 10 in. higher than the potatoe stalks. Smaller wire, like hair, was twisted around the the leading conducting wire, to present points, and to divert undue electric currents from the vegetable stems and leaves.

As before observed, these trials were too limited, but extremely encouraging in their results. Ridges defended by a wire along their entire length were much more safe than those left without these horizontal lightning rods.

Should any cultivator be inclined to try this plan, the expense is not much. The copper wire is always worth (almost) its first price, and can be stretched along, resting upon upright posts, such as bits of gas-pipes, pieces of hoops, or nail-rod iron—all being things of little cost. Each drill or ridge would then look, on a small scale, like a single telegraph wire, extended along a railway; and if found to answer, might be applicable to similar purposes for years. Should any person require further details or explanations, I send you my address, and will be glad to aid every effort to bring this theory and practice to a more general test, at a time like this.—JAMES MURRAY: *German-place, Brighton, August* 18.

FALLACY OF COMPRESSED AIR FOR THE TRANSMISSION OF POWER.

SIR,—Reverting from the political to the philosophical part of the subject, permit me, deferentially, to remark the atmospheric, unconditionally safe system, would appear essentially correct in its present form, though neither in its mechanical arrangement, construction, or *modus operandi*. In speaking then of "form," it is the mode of applying the atmosphere, or element of propulsion, which might be considered perfect; such as rarefying the air, or employing vacuum in lieu of compressing an elastic fluid, also in admitting impingement on the back of the piston direct through the valve, and avoiding the movement, in the rear, of a long column of air, which only at an ordinary density proves itself, through friction, so great a disadvantage in the complicated close-tube schemes, that even the leakage through the dreaded longitudinal slot is found to be a loss no greater, if not less. Plans there are, and have been, before the public, decidedly better than that now exhibiting on the Croydon line; but the system there, in respect to the employment of the atmosphere, may be regarded as philosophically sound. This remark in no way detracts from the more prominent merits of other schemes; but is induced by the consideration of so many recent attempts to revive an exploded theory, by which the laws of pneumatics are not merely carelessly considered, but pointedly impugned. Air, the food of life, so many cubic feet of which we imbibe each minute, has its absolute requirement more generally acknowledged, than its nature and properties are sensible to some. It may seem strange, that the main principle of action is overlooked, or but secondarily regarded, in research for means to effect a *safe*, economical, and efficient mode of transit: but when compressed air is proposed, in preference, or even as a large auxiliary to vacuum, for atmospheric railways, such inconsideration undoubtedly is the case. This is an instance, in which mechanical *practice* may take a lesson from scientific *theory*, or stumble on in *superior* (!) ignorance to expend *much*, but effect *nothing*. In reference to pneumatics, here the ancients have been the legislative discovers: consecutively came Aristotle, who shrewdly suspected the air to have *weight*; Hero, that *suction* would *rarefy* it; Galileo and Torricelli proved more correct and useful in their studies; while Papin, both in England, Auvergne, Westphalia, &c., and more recent experiments in Wales, confirmed, not only that the air had *weight*, and could be *rarefied* or *condensed*, but also that it partook of *friction* to an extent almost inconceivable—that a column in anyways dense put in only slow motion, met with so great retardation, that, within very narrow limits, the *smallest* power would fail to be elicited from the *largest* prime mover; or, in other words, the friction of the particles of an elastic fluid, not only amongst themselves, but in passing through, on the sides of a vessel, or tube, consumed, on arrival at a certain point, the entire initial force. Air, being elastic, the gradual decay of its original spring, as well as the friction consequent on motion, was found to detract so largely from first impulse, that, in a three mile length of tube, a most powerful compression at *one* extremity would not blow out a candle at the *other*. (See Dr. Robinson's *Natural Philosophy*). Besides, there is a chemical property attached to compressed air, which examples of opposite principles would assert, is far from generally known—a circumstance alone that offers sufficient obstacle to render useless, in point of economy, a condensed medium to the transmission of power. It is here that the fallacy reigns: the heat evolved in compressing air is a necessary ingredient to the development of any proportionate force; for, it is well known, rapid condensation in a vessel immersed may be extended so far, as to cause the surrounding water to boil—so that unless the air be *immediately* used on compression, the escape of *caloric*, through the pores, &c., of a vessel, rob largely from actual effect—ignorance of this fact was the cause of failure in the attempts of Medhurst, in 1799; Bombass, 1828; Mann, 1828; and Samuel Wright, in the same year: the latter ultimately applying artificial heat to regain the effect due the escaped caloric; others have followed in the rear, with precisely the same obstacles to overcome.

However, again, in using rarefied air, say one-third of a vacuum nearly or 10 lbs. effective pressure, there is on the back of the piston a force, to propel which, to effect an equivalent by compression, would require the column of air in motion of a very largely increased density—that is, with the use of vacuum; by admitting the air *direct* through the valve *on the back* of the piston, the movement of an after column is avoided, while that in front is only of 5 lbs. (under) pressure on the square inch; whereas with a closed tube and compressed air, the after column is of five times the density, and the fore one also in same rapid motion of ordinary atmosphere, or three times (being driven out): thus equal to, in a section of one mile, as compared, at half the measured distance, $\frac{1}{2}$ a column of 5, with same of 3, contrasted with (by vacuum) $\frac{1}{2}$ mile of 5, or as 8 to 2·5, for equal amount of traction, speed, &c.—consequent friction, without reference to alluded chemical loss, reflects sufficiently. But further on this head—in the *Franklin Journal* it is given, a 3-inch diameter pipe, 1 mile long, to produce a velocity of 128 feet per second (rather under 1½ mile per minute, or, say, 80 miles an hour), would require a pressure of $5\frac{1}{10}$ atmospheres, delivering 2304 gallons per minute; and that a 9 feet head of air, or $\frac{1}{850}$th of a head of 9 feet of water, will generate a velocity in a 3 in. diameter pipe 1 mile long, of 1 foot per second (or under $\frac{1}{4}$ of a mile per hour). Now, the initial velocity due to air of ordinary density entering a vacuum is, *minus* friction, about 400 metres per second, or, say, 840 miles per hour. These data, properly weighed and contrasted, in connection with the foregoing allusion to chemical loss, by radiation of caloric, will show the fallacy of compressed air, or determine its practicability to the transmission of power, whether it be *via* locomotive or traction-pipe, except in extremely short columns, to a small extent and expansively. This, however, has been omitted, that the required pressure for increase is laid down, not inversely, but as the square of the velocity. It also has been asserted, but I doubt authoritatively or correctly proved, that the friction of air in moving over surface, is as the cube of density and velocity—does this rule apply to elastic fluids in motion? That intermediate working on the atmospheric railway, to the storing of power, is essential to economy must be admitted; but, for that purpose, compressing air is not arriving at the extent other means might be found to do.

The numerous, almost daily, revivals of this exploded theory, would bespeak either positive ignorance, or a wild and fruitless endeavour to subvert the laws of Nature. Let not these remarks be considered in the light of sarcastic attack, or as being open to correction of any errors that may be found, unjust motives imputed; they form but a suggestive call to reason, from the fruitless exercise of means, in a way, which so often before explored, never *can* become a useful route.—CANDOUR: *London, Aug.* 24.

THE GEOMETRICAL RAILWAY.

SIR,—We are glad to see the discussion of this question restored by your correspondent of Cambridge to its former ground—the ground upon which we established it: we did not write any personality.

On such subject as a geometrical question, it would be convenient to follow a more regular order—to use fewer arguments, but to use only good ones—to support them when they have been emitted, and not to be always changing weapons and tactics. It is not in the number of proofs, but in their value, that strength is to be found; and we shall, therefore, adhere to our former arguments, and taking the most positive form of presenting them, answer the letter of "G. M. T." by some propositions on its contents.

We also think that the judgment of anybody being "hasty, wrong," or anything else, is much better placed as a conclusion after a reasoning than as premises before it:—

PROPOSITION I.—*Dicimus*: Natural sciences to be composed of some *general principles*, resulting from special experiences, or calculations based upon these experiences. Any question connected with these sciences to be judged by these general principles, as *laws* on the matter. These *laws* once established, to be changed only by the results of new experiments or new calculations, proving the former ones wrong and void.

Atqui.—The *law* of the friction not increasing with the surface in contact, has been established by the numerous experiments of Coulomb, Vince, Rennie, Dupuit, Morin. The axiom brought forth by Mr. Greenhow, that "the less are the points of contact the less is the friction," is quite opposed to this *law*. No particular position has been pointed out, no experience, no calculation made to prove the case proposed, different from that studied by the establishers of the *law*.

Ergo.—This axiom is condemned by a positive *law* of *mechanics*—the value of which has not been destroyed in any manner: it is *wrong*.

PROP. II.—*Dicimus*: The flange—in railway carriages a necessary evil—to be as much as possible avoided. The difference between the flange and the tire of the wheel to be nothing else than rubbing surfaces acting instead of rolling ones. The evil in a flange to be, thus, as great as possible, when the whole of the tire presents rubbing surfaces; the resistance of rubbing surfaces to be, as compared to that of rolling ones, as 8 or 10 to 1. A line in geometry not to be a surface.

Atqui: We have proved, in our first letter, that all the parts of the concave tire, except a line, are rubbing surfaces.

Ergo: On the concave tire the whole of the surface presents the character of a flange. "*The whole of the tire is a flange.*"

PROP. III.—*Dicimus*: The conclusions drawn from comparisons, if comparisons can be considered as arguments, to be of some value only when the objects compared are in very identical circumstances.

Atqui: In the piston of a steam-engine of any form whatever, the resistance of the surfaces moving one over the other, is a resistance of *rubbing surfaces*. In a flat wheel applied to a flat rail, the resistance is that of *rolling surfaces*. In a concave wheel, applied to a convex rail, the resistance is that of *rubbing surfaces*. The resistance of a square piston has been compared to that of a flat wheel. The resistance of a circular piston to that of a concave tire.

Ergo: The objects compared are placed in opposite circumstances. The conclusions drawn from this comparison are *false*.

COROLLARUM.—Cylindrical form has been adapted to steam-engines, for the only reason of its being cheaper, easier of construction and repair.

The only increase of resistance in a perfectly well-fitted square piston over a perfectly well-fitted cylindrical one, would arise from the difference of surrounding surfaces, as compared to the area of the piston in the two cases proposed.

PROP. IV.—*Dicimus*: The perpendicular form of spokes to have been demonstrated, by experience and calculations, as the strongest, the best in every respect, for railway carriages. These results of experience and calculation to condemn any other form, unless advantages be demonstrated to this form, by new experiments, or new calculations.

Atqui: No series of experiments have established the value of *inclined spokes*, the figures presented to support them have been demonstrated wrong.

Ergo: The proposition of *inclined spokes* is wrong.

When any new idea is brought to light, it is the duty of its introducer to establish its correctness—to destroy previously any other idea opposed to it, having the right of priority; and the system of *round rail*, of *inclined spokes*, being opposed to the principles actually accepted, and being not supported by positive proofs, it cannot be considered but as an erroneous proposition.

Indeed, we find that this right of *priority*, the convex and concave form, had it once—that what we now condemn by theory, practice has condemned some 50 years ago; we extract the following passage:—"There have been many different descriptions of rails proposed at various periods, amongst others was the *oval rail*, executed on the Perhyn Railway by Mr. Wyatt, in the year 1800. The wheels run upon these rails had *concave rims*; but it was found in practice, that this rail had a tendency to wear out very quickly, and others were, consequently, substituted."*

How can the quick wear of these rails and tires be explained but by the friction of *rubbing surfaces* we have pointed out? And what would be the wear of round rails when oval ones have been found to wear out quickly? Is not the wear a material expression of *friction*? We should feel the greatest satisfaction in seeing the theory of the geometrical railway exposed in a *mathematical manner* by your learned correspondent of Cambridge. Good arguments will always meet with our sincere and hearty adhesion. We shall, in some following article, review the pamphlet entitled "*Round Rail* v. *T Rail*."—N. A. BURNIER: *Dufour's-place, Aug.* 25.

Erratu.—In your last Number, the sign × is printed instead of + in the three first expressions of the equation given—the equation itself indicates this erratum.

* Brees's *Glossary of Civil Engineering*.

MR. GREENHOW'S GEOMETRICAL RAILWAY.

SIR,—It turns out, as I anticipated, that the effects of friction are materially modified by the rolling of a body of corresponding figure over a round, or cylindrical, surface. I understand that Mr. Greenhow has proved this in the most satisfactory manner by experiment. My information is derived from a friend, who had an opportunity of witnessing the experiments of Mr. Greenhow, which he describes as being of the most simple and convincing character. To carriages of equal weight and size, one of the *ordinary* and the other of the *geometrical* construction, each running upon its appropriate rail, Mr. Greenhow communicated an equal degree of propelling force, and marked the degree of friction by the distance traversed over a plane, or horizontal surface of rail. The result proves, that on the round rail the friction is so much lessened, as scarcely to exceed one-ninth of that on the ordinary rail. This is a most interesting fact in physics, and will probably, admit of useful application in other mechanical arrangements than Mr. Greenhow's geometrical railway, in which it must be most valuable. I trust, and cannot doubt, that Mr. Greenhow will soon make public these really important experiments in all their minute and accurate details; they will, probably, throw much new light on a subject of great interest, in reference to mechanical science.

It had been my purpose to attempt an exposition of some other parts of the Geometrical Railway System of Mr. Greenhow; but finding that this has been already done in a short publication, by a writer who styles himself "Geometricus," who appears to have devoted himself to the subject, with much zeal and discrimination, and to have successfully explained some of its more leading principles, perhaps even to the satisfaction of M. Burnier, I shall defer, at least, any further examination of the subject, until some future occasion. Nevertheless, holding myself in readiness to remove misapprehensions in the minds of any of your correspondents. G. M. T.

Cambridge, August 21.

RELATIVE FRICTION ON ROUND AND FLAT RAILS.

SIR,—I beg to trouble you with the result of some very interesting experiments, made by me in the presence of several scientific and practical men, which entirely corroborate my views on the different amount of friction that exists between a wheel with a concave tire, adjusted as I propose progressing along a round rail, and a wheel with a flat running surface, and angular flange passing over a flat rail. I consider those experiments most important, as fully bearing out my demonstration of the relative amount of friction on the round and flat rails, contained in the *Mining Journal* of the 1st inst. I had two carriages of similar dimensions and weights, the one fitted with the wheels, as proposed in the Geometrical System; the other with wheels such as are now used on railways, the diameter being the same in both cases. I had also railways adapted to each, of equal gauge, laid side by side, the ends of each being elevated, so as to form inclined planes at a gradient of 1 in 20. Then, by allowing the carriages, moved only by the gravitation, to run equal distances down the inclines, the one meeting with the least resistance from *friction* (the other resistances being equal in both instances), would acquire the greatest momentum on the incline, and, consequently, run to the greater distance on the level. Whilst the one meeting with most resistance from friction, would not only acquire less momentum in descending the incline; but would also meet with more resistance on the plane, and therefore run a much shorter distance on the level. The mean of six experiments gave the following result:—The distance run, after leaving the incline by the carriage on the flat rail, was as 13 to 42; by that on the round rail, showing the difference of resistance in the former to be many times more than on the latter, it is not necessary to go into a minute calculation of the exact value of the different resistances, the above round numbers sufficiently proving the case. Next a further experiment was tried, by raising one rail above the level of the other, a distance equal to one-tenth of the gauge—thus making it necessary for the flanges to act on the side of the rail, so as to prevent the carriages from running off the line. Still keeping the gradient of the incline at 1 in 20, as before, the carriages were then allowed to run down the inclines, when the great advantage of the concave tire, acting as a flange on the round rail, was immediately apparent—the carriage on the flat wheel and rail meeting with so much resistance from the action of the angular flange on the edge of the lower rail, merely moved to the bottom of the incline, without *at all* progressing along the level; while the one with the concave wheel tire on the round rail ran a distance, as 84 is to 42, in proportion to what it did with the rails at equal levels—fully proving that the increase of friction, when the concave flange is brought into close contact with the round rail, is infinitely less than when the flange and rail, at present in use, are placed in like circumstances.

This, I consider, at once sets at rest the *question* of *friction*, as proving the decidedly great advantage of a concave tire, when causes make it necessary for the flange to act; and when we consider that it is impossible to preserve that proper relative level between the rails, absolutely necessary to prevent the carriages inclining to either side, so as to bring the flange into *close contact* with the edge of the rail—also that the rails are incessantly making curves, which, however slight, still make it necessary for the flange of the *outer* wheel to act on the rail, in order to divert the straightforward tendency of the momentum, into the direction taken by the rails—the atmospheric resistance in high winds, and many other causes constantly occurring to make this action of the flange necessary. I ask the simple question—is it not absolutely necessary to arrange the connection between the wheel and rail, in such a manner that the flange will act with the utmost certainty and safety, in resisting an attempt at lateral movement, at the same time that the increase of friction is of the smallest possible amount; and by this means greatly conduce to the safety and comfort of the traveller, whilst much economy of tractive power, and immense diminution of *wear* and *tear*, will accrue to the railway company. Begging you will allow the importance of the subject to be an excuse for the length of my letter, I am, sir, &c., C. H. GREENHOW.

3, *Lothbury, August* 27.

PILBROW'S ATMOSPHERIC RAILWAY TUBE.—Mr. Pilbrow has obtained a patent for improvements on his atmospheric tube, without a continuous opening, but which was worked by racks and pinions, to which many objections were started, particularly as to the concussions and danger of breakage, to which they would be subject at high velocities. To obviate these objections, the inventor has hit upon a mode of traction, which we certainly think superior to the other; the real merits of which can, however, only be tested in practice. It consists, as before, of a continuous cylindrical tube, with the exception that, at distances of about 30 ft., there are openings in the upper surface 3 ft. long, covered by a flap valve; attached to the piston rod in the tube, is a rack, formed of a triple series of flat metal links, rivetted together similar to the barrel chain of a watch—thus forming a series of catches, into which a toothed rod would hold, and be drawn along with it; the channel through which the piston rod runs is so formed that, on arriving at one of the openings, the valve is immediately raised, and the chain rack presents itself above the opening, laying hold of the teeth of a rack, placed at the bottom of the leading carriage, and, consequently, propelling the train; the chain leaves the teeth at the front of the opening, while it catches others as it rises at the other end, until the 30 ft. has passed, when the valve is again closed, and the tube ready for re-exhaustion. The chain rack being sufficiently long to extend over two openings, a continuous propulsion is thus obtained, and the successive opening of the valves admits the necessary air. In all cases of rapid transit there must be an objection to teeth, pinions, racks, &c., though this plan (we think) is certainly more defensible in practice, than many others of the same description which have been before the public.

AUDIBLE SIGNALS FOR RAILWAYS.—Mr. J. Stansbury, M.A., of Hackney, has devised a new system of audible signals, to be employed in addition to those in ordinary use. The peculiarity of the system consists in the adoption of whistles of different sounds on different lines of rail, and the sounding them at regular intervals of distance. The following are the details of his device:—1. Let there be attached to every engine two steam whistles, of different and easily distinguishable sounds.—2. Let one whistle be sounded when the engine is on one line of rails, and the other when on the other line of rails, invariably; let them never be interchanged.—3. Let the appropriate whistle be sounded by every engine, day and night, along the whole route, at every mile post, or at every half mile post, if necessary; and where lines unite or cross each other, still more frequently.—4. Let there be a signal man on every engine, whose sole business it shall be to make these signals, and observe them, and give the necessary directions to the engine driver.—5. It would follow, as a matter of course, that two trains being found to be on the same line of rails, whether moving in the same or in opposite directions, both should be immediately stopped, and thus a collision prevented.—1. It is submitted, that if this plan be adopted, no two trains can at any time be within a mile, or half a mile of each other, without the conductors of both being aware of it; and, further, without their knowing whether they are on the same line of rails.—2. The whistle not in use might be closed under lock and key, to prevent it being sounded by mistake, on the wrong line of rails.—3. On dark nights a lantern might be attached to each mile or half mile post, if it should be found necessary.—4. There should be the means of crossing from one line of rails to the other every few miles.—5. It is to be anticipated, that persons residing near the line will become accustomed to the sound of the whistle, and, associating with it the idea of the security of millions of lives, will not feel themselves annoyed by it.—6. The signals are not intended to supersede any of those now in use.

One of the largest trains probably ever seen left the Rugby station on Friday. It consisted of 84 carriages, and was impelled by three of Stephenson's powerful six-wheeled engines. Its length extended to nearly half a mile, and the weight of merchandise, exclusive of the carriages, was upwards of 240 tons.

NOTICE OF THE COPPER AND TIN RAISED IN CORNWALL.

By ROBERT HUNT, Esq., Keeper of Mining Records.

[From a very valuable work, entitled *Memoirs of the Geological Survey of Great Britain, and of the Museum of Economic Geology*, just published, by order of the Lords Commissioners of her Majesty's Treasury, by Longman and Co., Paternoster-row, London.]

Of the early history of English copper-mining we have no authentic information. Tradition informs us, that the Paris mountain in Anglesea was explored by the Romans; and one part still bears the name of "the Roman work."

Cumberland appears to have been the only productive district for copper up to A. D. 1250, at which period a rich copper mine was worked near Keswick*; and still later, about 1670, the mines of Staffordshire only are mentioned as producing any quantity of copper.

Edward III. granted by indenture, dated 11th of July, in the 32d year of his reign, unto John Ballanter and Walter Bolbolter, "all his mines of gold, silver, and copper, in the Countie of Devon for two years;" but we have no account of any workings prosecuted by these adventurers.

In the reign of Henry VI. patents were granted to John Sollers, John Bottwright, and the Duke of York, for working "all mines of copper, tin, and lead," in Devon and Cornwall, "whereout any gold or silver shall be fined." It would, therefore, appear that, although copper was known to exist in the rocks of Cornwall, it was only worked, if worked at all, with a view to separate the precious metals these ores were supposed to contain.

That the quantity of copper produced altogether in Britain, in the reign of Henry VIII., was very small, appears from the Acts of Parliament passed in the reigns of Henry VIII. and Edward VI., to prevent the exportation of brass and copper, "lest there should not be metal enough left in the kingdom fit for making of guns and other engines of war, and for household utensils."†

A patent for making brass was granted by Queen Elizabeth to William Humphry, and Christopher Shutz, in which they are permitted "to search, dig, and mine for the *calamine stone*, in all parts of England." An incorporated society was afterwards formed for the same purpose, under the name of "The Society for Mineral and Battery Works." There is every reason to suppose the copper for this brass manufactory was imported; indeed, in 1665, amongst other reasons given by the brass manufacturers, for asking for an increased imposition upon "Foreign Latten Weir," they state "that having an inexhaustible quantity of the calamine stone," the continuing these works in England will occasion *plenty of rough copper to be brought in.*"

The statements in Carew's Survey, written about 1586, and in Norden's, which is probably a little older, stating that the copper found in Cornwall was sent to Wales to be smelted, are not to be brought as proof, that any quantity of copper was then raised in Cornwall. It is probable that the copper lodes of Huel Trenwith and Huel Providence, near St. Ives, may have been known.

It is certain, that up to the end of the 17th century, the Cornish miners knew little of the value of copper ore. Borlase says:—"Some gentlemen from Bristol made it their business to inspect our mines more narrowly, and bought the copper raised for 2*l.* 10s. per ton, and scarce ever more than 4*l.* per ton. It must be observed that the yellow ore which now sells for a price between 10*l.* and 20*l.* per ton, was at this time called poder (that is, dust), and thrown away as mundic."‡

Shortly after 1700 Mr. John Costar introduced an hydraulic engine into Cornwall, and succeeded in successfully draining some of the mines, and "he taught the people of Cornwall also a better way of assaying and dressing the ore.

From this time the quantity of copper produced in Cornwall has gradually increased. The following table, arranged from two given in Pryce's *Mineralogia Cornubiensis*, will exhibit the earliest conditions of the Cornish copper market on which any reliance can be placed.

Date	*Tons.*	*Date.*	*Tons*
1726	5000	1731	7000
1727	6700	1732	7290
1728	6800	1733	7000
1729	6870	1734	6000
1730	6900	1735	5240
Average price per ton	£7 15s. 10d.		
1736	8000	1740	5000
1737	9000	1741	5500
1738	10000	1742	6050
1739	11000	1743	7040
Average price per ton	£7 8s. 6d.		

From this period to the end of 1844 an attempt has been made to show the progress of copper-mining in a diagram, plate 9.

It has not been thought advisable to crowd the diagram unnecessarily; therefore, the prices given per ton for copper ore at different periods has been omitted. The following table will, however, present a tolerably complete view of the principle variations in the average price of the Cornish copper ore:—

1700	£2 10 0	1805	£10 1 10½
1730	7 15 10	1814	8 15 4
1750	7 6 6	1822	6 7 0
1779	5 16 0	1832	6 1 6
1797	7 17 8	1842	6 4 4

The low price per ton of Cornish copper in 1779, appears to have arisen from the immense quantities of copper thrown into the market from the Anglesea Mines. These were discovered in 1768. In 1784 they produced 3000 tons of copper annually, and about the same period a great copper mine at Ecton Hill, in Staffordshire, was also discovered, its most productive period being about 1780. By throwing into the market at once, as much ore as could be raised from these mines, the price of copper was much reduced, and considerable injury inflicted upon the copper mines in general.

The terms "copper ore standard" being used in the diagram, it is necessary to explain that the "standard" means the price paid the miner for the copper in the ore, from which are deducted the expenses of bringing it to a state of purity. The sum deducted from these expenses since 1805, has been 55s. for every ton of ore.

The quantity of copper ore raised in the county, between 1789 and 1794, it is now impossible to ascertain. This arises, it would appear, from the agitation spread through the mines of Cornwall at this period from the disputes between Bolton and Watt, and Bull and Hornblower, respecting the infringement by the latter parties of Bolton and Watt's patent for their improved engine for pumping the waters from the mines—the consequence of which was a desire on all sides to keep secret as much of their proceedings as possible. In addition to the copper ores of Cornwall, the quantity of tin ore, and its produce in tons and blocks, is also represented on the diagram up to the end of 1838; beyond which time, from the coinage being abandoned, it was impracticable to continue the account with anything like accuracy. The following tables will exhibit a curious relation between the duration of several Cornish copper mines and their average produce of copper. During 30 years, from 1815 to 1845, the number of mines in Cornwall which have sold at the public ticketings parcels of upwards of five tons of copper ores, are 220. The duration of these mines appears to have been as follows:—20 years and upwards, 35; 10 years and upwards, but under 20 years, 40; 5 years and upwards, but under 10 years, 31; less than 5 years, 114.—Average per centage produce of the 220 mines for the entire period above named, 7¼; highest average produce of copper from the ores of one mine, 26¾; lowest average produce of one mine, 2¾.

[*To be concluded in next week's Mining Journal.*]

* The close rolls of Henry III. give some account of these Cumberland mines. A charter was granted to Keswick by Edward IV., A. D. 1470; and Camden states these copper works "were not only sufficient for all England, but great quantities of copper were exported every year."—*Gough's Camden's Britannia*, Edition, 1806, vol. iii., p. 422.

† The metals prohibited were brass, copper, latten, bell metal, pan metal, gun metal, and shrof metal, 21 Henry VIII. c. 10, 33 Henry VIII. c. 7, 2 and 3 Edward VI. c. 37 — See "Watson's Chemical Essays," vol. iv., Ess. i., p. 75.

‡ *Borlase's Natural History of Cornwall*, 1758, p. 205. In a note it is stated, that the copper of N'uun-vian, in Piranuthno, and at Mr. Ustick's works in St. Just, were sold at the price named in the text; and that "Mr. Beauchamp, of Gwennap, of this time (1719) covenanted to sell all the copper which should rise out of a mine well stocked, for 20 years, at 5*l.* per ton; and the ore at Relistian, in Gwinear, was covenanted for at 2*l.* 10s per ten. Sir Henry De la Beche imagines this term rather to apply to the black copper ore, and in a note on this subject says:—"As *poder* means dust, which would agree with the appearance of this friable ore, it may be questionable how far Borlase may have been correct in stating that the yellow copper was thus named. As *poder* has this meaning, may not the name be merely a provincial manner of pronouncing the English word *powder*."—*Geological Repor of Devon, Cornwall, &c.*, p. 591.

§ The standard in this year was unusually high. The cause of this high price appears to have been simply, that the demand greatly exceeded the supply.

RAILWAY TRAFFIC.—From our official returns, it appears that the amount of traffic for the last week, on nearly 1800 miles of railway, was 169,719*l.*, [thus accounted for:—94,903*l.* for the conveyance of passengers only, 32,281*l.* for the carriage of goods, and a remainder of 42,535*l.* for passengers and goods together, not respectively apportioned; being an increase over the corresponding week of last year of 21,254*l.*—*Railway Chronicle*, of this day.

Proceedings of Public Companies.

MEETINGS DURING THE ENSUING WEEK.

MONDAY.....Wheal Elizabeth Mining Company—office, Tavistock.
Thames Haven Dock and Railway—offices, at One.
Dublin, Belfast, and Coleraine Junction Railway—offices, at Twelve.
London, Hounslow, and Western Railway—London Tavern, at One.
TUESDAY.....South St. George Mining Company—on the mine, Truro.
WEDNESDAY..Worcester, Tenbury, and Ludlow Railway—London Tavern, at Twelve.
Cornwall and Devon Central Railway—London Tavern, at Twelve.
THURSDAY.....Direct London and Portsmouth Railway—London Tavern, at One.
Great Eastern and Western Railway—London Tavern, at Twelve.
FRIDAY.....Hayle Railway Company—offices, at One.
SATURDAY..Leicester and Bedford Railway—London Tavern, at One.

[*The meetings of Mining Companies are inserted among the Mining Intelligence.*]

IRISH WASTE LAND IMPROVEMENT COMPANY.

The half-yearly general meeting of the shareholders in this undertaking, was to have been held at the King's Head Tavern, Poultry, on Thursday last, the 27th inst.; but, in consequence of the absence of so many gentlemen connected with the company from town at this season, a sufficient number did not muster to make a legal meeting.—Mr. Maude, however, obligingly allowed a letter from Col. Robinson, the manager, to be read, which too clearly showed the awful distress to which the peasantry must be shortly exposed, unless extraordinary exertions are made to counteract it. This letter states, that the condition of the poor in Galway, and on the company's estates, is truly serious; many of them, respectively, have lost from two-fifths to five-sixths of their potatoes—that it will be impossible for the largest portion of them to pay rent. Some have sufficient oats to last out half the year, others not; no chance of anything being done without employment at remunerative wages; and no one could see where that was to come from; potatoes could not be relied on for planting, and few things could be used as a substitute on bog lands. Rape peas, beans, vetches, &c., may do on land which has been drained and brought into cultivation; but few have made sufficient good use of their time to have effected this to any extent. The recommendations for the amelioration of this dreadful state of things, are—change of, and increase in, the crops; allow the tenants more for drainage; encourage them to exertion by a reduction of rents; endeavour to meet their future wants; not to increase the rents in the next year; and consider what are the best steps to be adopted to secure cheap food after Christmas. It was stated, that every part of Ireland had the same dismal prospects; and that the county of Mayo was, if possible, in a worse state than any other part of Ireland.

SLIGO AND SHANNON RAILWAY AND SLIGO SHIP CANAL COMPANY.

The first general meeting of the proprietors of the above company was held at their offices, Winchester House, Old Broad-street, on Thursday, the 27th inst.—G. C. GALT, Esq., in the chair.—Mr. BEACHCROFT, the solicitor to the company, having read the advertisement calling the meeting, the CHAIRMAN (in the absence, from illness, of Mr. A. Gole, the secretary), read the following report:—"Your directors have the gratification of stating, that the Sligo and Shannon Railway Act received the Royal assent on 3d August, and the directors, in pursuance of the provisions of the Act, have called the shareholders together. This company was formed in the month of June, 1845, since which time your directors have been constantly employed in carrying out those plans; and they congratulate the shareholders, not only on the successful result of their exertions, but also for the improved prospects of future success, which are now opened to them. Your directors are satisfied that it is mainly owing to the goodness of the line, and the certainty of considerable profit, that has induced the merchants of Sligo to embark a large proportion of the capital of this company. The landed proprietors, among whom we may name Lord Palmerston and Mr. Lane Fox, have assisted materially towards the realisation of our joint efforts, and the proprietors of more than half the land, through which the line intended to pass, have already taken shares to the full amount of its value; and there is every reason to hope, that the other landholders will take the value of their land also in shares. So much did the inhabitants along the line see the benefit likely to accrue from this railway, that although an opposition was contemplated, it received no support, lest it might endanger the prospects which this bill presented to them, and it, consequently, fell to the ground; since that period the future prospects of the company have greatly improved. It may be in the recollection of the shareholders, that last year several railways were proposed, and companies formed, for the purpose of connecting Sligo with various parts of the country; some of those schemes, if carried out, might have militated against the interests of this company. Your directors inform you, that this is the only one which has stood the test, and has now become the law of the land, and, with one exception, this is the only railway which has obtained the Royal Assent for the whole province of Connaught. The entire traffic between Sligo and Dublin must now pass over this line. The Shannon commissioners, in whose hands Government placed the sum of 700,000*l.*, have completed their work on the lower part of that river, and are now working at the northern extremity. It is expected that, within a year and a half, the River Shannon, from Limerick to the terminus of this railway, will be made navigable for steamers of a large class. The increase of traffic, which may be calculated from such an extent of inland navigation, is very great. The directors are further informed, that it is in the contemplation of Government to make a canal from Lough Erne to the Shannon, under the Drainage Act, which will have the effect of bringing the trade of Enniskillen, and the province of Ulster, along this line: such favourable prospects were not contemplated at the formation of this company. They will add considerably to the interests which the shareholders must take in this undertaking. The capital of this company is fixed by the Act to be 100,000*l.*, divided into 4000 shares of 25*l.* each, of which all were allotted. The short period that has elapsed since the Act was obtained, has not given the directors time to prepare an accurate statement of the finances of the company. The following will show the receipts and disbursements:—receipts, 4854*l.* 8s.; payments, 2376*l.* 2s. 11d.—balance in hand, 2478*l.* 5s. 1d. Exclusive of the solicitors' and engineers' bills, the liabilities of the company do not exceed 300*l.*, and, with reference to those accounts, your directors have been unable accurately to estimate their amount. The directors named in the Act are—William Richard Ormsby Gore, Hon. Henry St. John Edward Nicholls, William Kernaghan, Griffin Curtis Galt, Philip Bennett Lucas, James Vickers, William Galt, Sir John M'Taggart—all of whom propose themselves for re-election. It is necessary to elect two auditors—the directors recommend that Mr. Samuel Vickers and Mr. William Thompson be appointed the first auditors, and that their remuneration be 10*l.* each. The directors consider that 250*l.* be a proper remuneration to the secretary."—Resolutions were unanimously passed, adopting the report; and a vote of thanks having been given to the chairman, the meeting separated.—[A meeting of the Sligo Ship Canal Company, consisting of the same parties, was held immediately before the railway meeting.]

ARMAGH, COLERAINE, AND PORTRUSH RAILWAY.

A special meeting of the shareholders in this company, was held at the London, on Friday, the 28th inst., for the purposes, as detailed in the advertisement, of considering whether it would be advisable to carry out the amalgamation with the Belfast and Coleraine Company, or not; and, if the latter was decided upon, to proceed to a dissolution under Lord Dalhousie's Act.—C. FOX, Esq., was called to the chair, and said the advertisement expressed the object of the meeting, and the directors thought it was most desirable to carry out the amalgamation. The line, as finished by the joint companies, would pass through the richest parts of Ireland—through the fertile districts near the Lake Loughrea, tenanted perhaps equal to any portion of Ireland, and which was the property principally of the Irish Society—as good landlords as any in the country: he then entered into a history of the company, and that of the Belfast and Coleraine Company. It appeared, that the two were originally competing lines, occupying the same ground in a large portion of the length of the line; that, forseeing endless expense and litigation in opposition, they had coalesced, and Mr. Rastrick had been the umpire to decide on the portions to be given up, and maintained, of each scheme in the joint line, which was satisfactorily arranged, and eight gentlemen from each direction had sat at a joint board of direction since. The Belfast Company had now obtained their bill, and they now came before the shareholders for them to ratify, or not, such amalgamation: he called upon Mr. Galt, the secretary, to read the report. At this stage of the proceedings, a SCRIPHOLDER asked to have a protest against the legality of the meeting, which had been forwarded the directors, read.—The CHAIRMAN said, they should not be justified in taking up the time of the meeting, in reading every bit of paper forwarded them; the parties could express their sentiments then at the meeting. Here a scene of perfect uproar ensued, evidently "got up" by a party of about 10 in the room, to oppose the amalgamation; order was, however, restored, and Mr. GALT read the report, which was merely a more detailed statement of the history of the affair than that given by the chairman.—M. ST. ANGE, in a neat speech, moved an amendment "That the amalgamation be not ratified—that the company be dissolved under Lord Dalhousie's Act, and 1*l.* per share be returned."—After much speechifying and uproar on the part of the malcontents, two scrutineers were appointed.—A few shareholders refused to vote, and left the room; the scrutiny was then proceeded with, when, at its close, there appeared 7595 for, and 621 against, the amalgamation; it was thus carried, and a resolution was then passed, empowering the directors to pay off liabilities and to proceed to the formation of the line.

NORTHERN COUNTIES UNION RAILWAY.

The first general meeting of the shareholders in this company was held at the London Tavern, on Tuesday last, the 25th instant.—Major BERESFORD, M.P., in the chair.—After the usual preliminary proceedings, the report was read, which stated that the funds in hand amounted to 71,195*l.* The directors considered that it would not be expedient to commence a heavy outlay on the whole line at once; they, therefore, intended to resurvey the expensive portions, and apply next session for an amended bill, which will considerably reduce the estimate. The cost of construction would also be reduced by arrangements with the Liverpool, Manchester, and Newcastle-upon-Tyne Company, which, if carried out, would reduce the amount of each share in the amended bill; they, therefore, requested a general authority to go to Parliament next session.—The CHAIRMAN said, there had been two distinct companies, with distinct capital, but amalgamated. The Leeds and Carlisle paid 10 per cent.; they had, therefore, taken the smallest amount, which was 1*l.* 5s. per share, and called on the other two companies to subscribe the same amount of 1*l.* 5s. An account would be sent to every shareholder who had signed the deed; and it was possible there would be some residue, which would be divided exactly *pro rata*. A very lengthened conversation ensued; and the result of the meeting was, that 18 directors were appointed, with a remuneration of 1000*l.* per annum; two auditors at 20*l.* per annum each; and, in moving that Ch. Locock Webb, Esq., be appointed secretary, at a salary of 500*l.* per annum, which was seconded, and carried unanimously, Mr. MIDDLETON observed that, "from the first commencement of the company, Mr. Webb has been engaged as provisional secretary, and I believe there is not one member of the board who will not tell you that Mr. Webb has devoted all his time and attention most assiduously and closely to his duties, and that he has performed those duties in a manner alike creditable to himself and satisfactory to the board, under whom he has been acting." After some further remarks, a vote of thanks to the chairman and directors was passed, and the meeting broke up.

CALEDONIAN RAILWAY COMPANY.

The half-yearly general meeting of the shareholders in this company was held at Gibb's Royal Hotel, Edinburgh, on Wednesday last, the 26th inst.,—J. J. H. JOHNSTONE, Esq., M.P., in the chair,—when, after the chairman had explained the chief points of the business of the day, to which the attention of the meeting would be called, a very elaborate report was read, from which it appeared that the progress of the works had been such, in the last six months, as to confirm them in their anticipations of the completion of the whole line from Edinburgh and Glasgow to Carlisle, by the 1st March, 1848, as stipulated in the contracts: that the following bills, promoted by the company, in the late session, had received the Royal Assent—viz.; Carlisle deviation, Clydesdale Junction and Pollock and Govan Amalgamation, ditto deviations, Glasgow termini and branches, Garnkirk purchase, Garnkirk and Castlecary branch. The total capital raised was 600,702*l.* 11d., and there was a balance remaining in hand of 52,882*l.* 18s. 4d. The report was unanimously adopted, and resolutions were passed, allowing interest at 4½ per cent. per annum, on the original shares, from 1st of October next, and authorising the directors to borrow any sum not exceeding 700,000*l.* We have thus given an epitome of the report of the meeting—a very long and complete account in our advertising columns precluding the necessity of entering here into further details.

RAILWAY FORGERY.—WORCESTER, TENBURY, AND LUDLOW RAILWAY COMPANY.—A general meeting, under the late Dissolution Act, of the shareholders in this company, was held at the London Tavern, on Wednesday last, the 26th inst.,—Capt. RICHARDSON in the chair,—and the meeting was taken quite by surprise, at being informed, that the directors had only the day before discovered that a fraud of a serious nature, and to a very considerable amount, had been committed upon them. The CHAIRMAN observed, that the present meeting was called for the purpose of receiving their assent, or otherwise, to a dissolution; the accounts had been laid before them at the last meeting—they had lost no time in paying off their liabilities, and very considerable reductions had been made; amongst them was 1000*l.*, taken off the solicitor's bill on taxation. Mr. Gravatt, the engineer, had sued them for his account, which they considered enormous—and, consequently, defended the action, in hopes of getting 1000*l.* off that also; he was sorry to say they were defeated, and were obliged to pay the whole. They were prepared to lay the whole statement of accounts before them, and to have paid to-morrow 17s. 6d. per share, and another 2s. 6d. at a future period: he was sorry to say that, only yesterday, the directors had discovered that a very extensive fraud had been committed upon their funds at the bankers, which placed them in a different position; and the directors thought it would be better for the ends of justice that nothing should be publicly said on the matter to-day, but adjourn for a week, when he hoped to be able to lay something important before them. The necessary forms having been gone through, and three scrutineers appointed, a very long and desultory conversation took place, from which the following facts were elicited:—The company's bill not having gone through Standing Orders at the time when an amalgamation with the Porthdynllaen line was entered into, the bill was withdrawn, and the amalgamation took place, the Great Western guaranteeing the payment of 5000*l.* in aliens to this company; they having, however, lost the broad gauge in this district, at once totally declined to have anything more to do with the undertaking, and, consequently, it had become defunct. The whole of the shares had been allotted, and the deposit paid, with the exception of about 600 shares, which would be paid in a few days, and the directors had been prepared to return the deposit, when the above unfortunate discovery took place.—It was at length decided, that the scrutineers should examine a certain number of shares—not sufficient to come to a decision—and adjourn the meeting for a week, under the provisions of the Act, when the directors hoped to be able to throw some light upon this unpleasant affair.—Mr. BURLEY (from Leeds) and several others, having expressed great dissatisfaction at the conduct of the directors, and certain parties connected with them, a committee of five was appointed, to investigate the whole affair previous to the next meeting; and it is but justice to say, that the present directors, who appear to have had no hand in the alleged traffic in shares, courted every inquiry. The meeting then adjourned to Wednesday next, the 2d September.—[We understood, before leaving the room, though it was not publicly stated, that the fraud in question was the alteration of the words and figures of a cheque for a small amount to 5000*l.*, and which sum the parties succeeded in obtaining from the bankers. We shall, of course, give the result of the adjourned meeting in our next.]

SOUTH WALES RAILWAY.—At the meeting of proprietors, on Wednesday, Mr. Brunel reported that satisfactory arrangements had been made for the construction of the line. Nearly the whole of it from Chepstow to Kidwelly, with the exception only of that portion of the line between Cardiff and Neath, which was affected by the proposed Margam deviation, has been let by contract; these contracts, forming an aggregate length of 54 miles, comprehend all the heavy works between Chepstow and Carmarthen, or, indeed, Haverfordwest—as the works beyond Carmarthen, and to the junction of the Haverfordwest branch, are not of a serious character. The heaviest works are in and through Newport, and from Neath through Swansea and Loughor. At Newport some considerable progress has been made with the shafts of the tunnel and the construction of the bridge over the Usk; and, in the neighbourhood of Neath, a commencement has also been made by the contractor. The portion between Swansea and Loughor was the subject of an act for a deviation which has only just passed; but the contracts having been prepared in anticipation, have been let immediately on the passing of the Act, and generally, as far as the company can enter into possession of the land, they will be enabled to proceed with the works. Steps have been taken for preparing to proceed immediately with the works between Chepstow and Gloucester, under the power of the Act just passed.

RAILWAY CAPITAL.—From a return issued by the Lords, on Wednesday, we learn that the total amount of capital authorised by bills this session amounts to 145,832,405*l.*, and that the total amount of further capital authorised to be borrowed is 33,411,081*l.*

The final assent royal of the session was on Wednesday given to 51 private bills; amongst them being, the Death by Accidents Compensation Bill, the London and South Western (London-bridge Extension), the Glasgow and Belfast Union, the Taff Vale, the Newcastle-upon-Tyne and Carlisle Branch, the Caledonian (Clydesdale Junction Deviation), the East and West India Docks and Birmingham Junction, the Cork and Waterford.

The wires of the electric telegraph connected with the Munich and Augsburgh railroad have been covered with a coating invented by Professor Steinheil, of Munich, which possesses the virtue of protecting them from lightning, thereby greatly tending to prevent accidents.

The Vierzon Railway has been delivered over to the company, by M. Flon-carre, the chief engineer. The line is expected to be opened during October.

A fine iron steamer has been launched at Waterford, with engines of 220-horse power, on the direct action principle, and cost 18,000*l.*

SAFETY NOTICE.—A Clifton correspondent calls attention to an important point, as a precaution in case of danger, so that a sort of telegraphic communication may exist between every guard and engine-driver. He suggests that we cannot do better than urge it on the attention of railway companies, and that a premium should be offered by some of the leading lines for the best design upon the subject; and, until something better is adopted, let a rope be made fast to a roller at the guard's seat (sufficiently loose to allow of the lengthening and shortening of the trains) and attaching to another roller fixed near the driver, having cogs to strike against a sheet of iron placed for that purpose when pulled by the guard, in case of danger; or the rope from the guard's seat may be fastened to the whistle-valve, so as to cause it to play when required.

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